

ART. III. *Cerebral Affections of Children.* By W. W. GERHARD, M. D. of Philadelphia.

THIS essay upon the cerebral affections of children will be divided into two distinct parts; the first containing the cases I have collected during a year's observation at the Children's Hospital of Paris, and the second consisting in an analysis of my own observations, and of such others as are contained in special treatises, or in the collections of the journals. From these two sources I shall probably derive sufficient materials to elucidate many points relative to the pathology of these diseases, and after separating such facts as seem clearly established by rigorous evidence, I may facilitate inquiries of subsequent observers. The cerebral affections of children are too rare for collecting a large mass of personal observations in a year's study; but their number, although insufficient for the resolution of many important questions is much larger than could have been met with in a long period of private practice, and will aid in the correct appreciation of the facts related by observers. Little other value is attached to these cases than as specimens of disease, and as proofs that criticism is not extended to other writers without previous study of the natural phenomena at the bed-side and in the amphitheatre. This little personal experience will be perhaps partially compensated by the absence of all preconceived notions as to the nature, relative importance of symptoms or frequency of lesions in these cases; many of the observations are incomplete, none of them perfect, but they have all been collected without the desire of confirming any previous opinion, or of reaching other results than such as will be warranted by rigorous deductions. I have avoided examining the works upon these affections, and have even abstained from comparing my own observations with each other, believing that during a series of observations I should pursue the safer course to avoid all risk of forming a premature opinion upon a subject still intricate and obscure. These precautions may appear trivial, but such as are most familiar with the difficulties of observation will readily perceive the danger of theoretical opinions, and understand the utility of extreme caution in avoiding all suggestions which might give a false colouring to a course of observations in actual progress; as soon as the series is complete, the examination of the facts related by others is both appropriate and necessary. Such a method of study seems to me the only means of arriving at truths which subsequent experience will confirm, instead of the vague notions thrown out by one author and rejected by his suc-

cessor as false and untenable. The phenomena of disease are like the facts of the natural sciences subject to laws, pursue a regular march, and tend towards a natural termination by the recovery or death of the individual. The important difference, however, between medicine and the study of the ordinary phenomena of nature, is that we have an infinitely more complicated science, demanding a greater variety of knowledge, requiring the consideration of a multitude of external agents which modify the usual phenomena, and from the nature of the object, a thinking active being, obliging us to confine our means of investigation to a narrow limit. These difficulties render rigorous observation more painful, but more necessary, and show the futility of theories and vague notions in a science which requires a more careful study of facts than any other: a chemist performs his experiments and then states his deductions, but physicians too often form their theory and afterwards search for facts to sustain it. In short, few questions can be resolved without a direct appeal to nature; and it is only from facts well established and carefully analyzed that uncontested truths can be deduced. I have thought it due to the reader to explain the methods of study pursued, and to state my firm conviction that no other means are capable of establishing what is positive in medicine than the simple observation and comparison of facts. A large portion of the medical world is not yet convinced of the practicability of this sort of investigation, and some physicians affect to disdain these painful researches, and imagine that it is the part of an humble order of intellect to be confined to the naked facts instead of indulging in those vast combinations which indicate a superior mind. But as the object principally to be attained in every scientific research is the discovery of truth, and not the gratification of individual vanity, the means to be pursued in the investigation are such as lead most surely to this end, and the physician who has courage sufficient to devote himself first to the rigid proof of the existence of the phenomena, and who will afterwards investigate their relations and seek to interpret the facts, pursues a more logical and useful course than he who discovers, or imagines that he has discovered an isolated cause with which he seeks to establish the connexion of the numerous facts that he witnesses. Indeed, the numerical method of observation, or in other words, the careful examination of facts followed by their numerical comparison is now recognised by a large number of physicians as the nearest approach to the method of study employed in the other sciences, with this difference, that the phenomena which we investigate are transitory and cannot be reproduced at pleasure as chemical or physical experiments, the proof of which is always readily

unconfirmed without the necessity of cyphers, which are indispensable to establish the more or less constant succession of the variable phenomena of disease. The imperfection of the method is not contested, but it is evidently the least imperfect of all; more truth and less error will be published by the observers who reason directly from their facts than by those physicians who are less rigorous—who simply write from imperfect recollection, and who attempt to fill up all voids with the creations of their fancy. Thus observation is essentially progressive, each succeeding observer fixes his point of departure at the spot where his predecessor had terminated his researches, and necessarily advances a little in the knowledge of truth; the progress depends on the epoch, not on the observer.

The cases of cerebral affections about to be related, comprise all those occurring in the boy's wards of the children's hospital at Paris, during eight months, from the first of August, 1832, to the 1st of April, 1833; during the four months, from the 1st of April to the 1st of August, 1833, all the cases admitted into the girl's wards will also be found in the collection, besides a few others that were collected before I had commenced a regular series of observations, or which I witnessed in divisions of the hospital in which I was not at the time habitually occupied. They were all mortal excepting two, which presented a totally different series of symptoms from those remarked in the other subjects. The classification is based upon the anatomical lesions of the cerebral organs, and is merely made for the convenience of the reader; in a subsequent article it will be retained or modified in conformance with the results of analysis. The title cerebral affection comprehends all the diseases in which the *predominating* symptoms consisted in some modification of the cerebral or nervous functions, excluding of course the cases of simple somnolence, stupor or delirium, and not even admitting convulsions or other grave symptoms which were merely the precursors of death, and not permanent or essential elements of the disease. Some examples of these cases will be given to establish the evident distinction between the two classes. Three divisions are for the present adapted; the 1st includes such subjects as presented some evident incontestable lesion of the brain or its membranes without the existence of well-characterized tuberculous or other accidental tissues; the 2d includes the cases in which these accidental structures coincided with the cerebral symptoms, and the 3d the subjects offering doubtful or extremely slight anatomical traces of disease. To complete the series it will be necessary to enumerate such cases as presented a lesion of the brain without being preceded by marked symptoms during life. The anatomical

cal classification is the most precise, and being based upon material facts, which are recognised without much difficulty, the transition is afterwards more easy to the cases which terminate happily.

*Observation I.*—Rebours Alfred, six years of age, entered the 1st of February, 1833. Born at Paris.

The following history I obtained from his mother, a woman of remarkable intelligence. He is the second child, was attacked with convulsions at the age of four months, immediately after a fall upon the floor, the convulsions returned frequently, especially during the period of dentition, which commenced at nine months and terminated at the age of three years: at this last epoch he was taken with croup, (diagnosis of the physician who attended him;) during the disease convulsions supervened, leeches were applied behind the ears, but the convulsions returned four times. From the age of three to four years he enjoyed perfect health; an eruption of scarlatina then appeared preceded by convulsions, which ceased as soon as the eruption became general. At five years he had measles, with return of convulsions before the eruption. Since that time he has had no convulsions, his health good, excepting a fever in August last accompanied with diarrhœa. He was vaccinated five times without success; has had an eruption of varicella, but neither small-pox nor whooping-cough. The child is very intelligent, lively, and impetuous; learns readily; was fat and strong until August last, since that time he has become thinner, but has not coughed. Eight weeks before his entrance an eruptive disease of the scalp appeared, which no longer existed notwithstanding the application of irritants to keep up the secretion at the end of four weeks.

On the 2d or 3d of January he fell in going to school, striking the back part of the head; since that time he complains of head-ache, but did not cease going to school until the 16th, when, after some days of increased cephalalgia, especially when near the stove, he returned home, complaining of severe pain in the head, and immediately vomited a greenish liquid. He was put to bed, and eight leeches were applied behind the ears; their application threw him into a violent fit of anger, accompanied with a convulsion characterized by the movements of the eyes and strong contractions of the limbs. From that time he was confined to his bed, the vomiting returning on several successive days. Since the month of August he has had a diarrhœa of five or six discharges daily, which ceased, and was replaced by obstinate constipation eight days before the symptoms. He has had fever; the convulsions have returned very frequently up to his entrance, especially after a second application of leeches to the tem-

ples three or four days previously, which was again followed by violent anger. Delirium within two or three days only.

*Present condition, February 2d.*—Hair and complexion fair; rather thin skeleton well formed; decubitus dorsal; face pale; features not much distorted, but risus sardonicus when spoken to, and frequent grimaces, extending to all the muscles of the face, with slight spasmodic movements of the jaw and lips—the corner of the mouth a little drawn towards the right side. Eyes not injected, slight strabismus of the right, pupils neither dilated nor contracted, natural; stupor constant, but easily dissipated on speaking to him; answers are sometimes correct, at others incoherent; delirium and cries during the night; movement and sensibility natural, without rigidity; he asks for food more frequently than drink; tongue trembling, moist, whitish and villous at the centre, reddish at the edges, not evidently deviated; deglutition easy; abdomen retracted, appears tender to pressure; no dejections; heat pungent and dry; pulse 80, small and feeble, but regular; respiration 26, irregular, a little elevated without dilatation of the nostrils, pure. Milk; hot pediluvia with ashes, (twice;) potion of Chaussier.

*3d, 9 A. M.* Delirium during the night, commencing at 8 o'clock last evening; since daylight he is calm; same decubitus; profound coma; eyes hollow; pupils dilated, contracting a little in a bright light, without a marked difference in size, regular, slight strabismus of the right eye; sensibility of the skin generally much increased, the slightest touch interrupting the coma and producing complaints; he complains of pains in the forehead, but says he has none elsewhere. Movements of the limbs natural, without the least rigidity; mouth slightly drawn to the right side, frequent movements of the lips; answers generally correct; voice natural; deglutition easy; heat dry, but not aerid; breath fetid; cough rare; pulse 80, regular; respiration 20, irregular, unequal; percussion of the chest sonorous, respiration vesicular without rhonchus; occasional complaints of pain in the abdomen. Potion of boric acid repeated; calomel, gr. iss.;  $\frac{1}{2}$  enema; diet.

*5 P. M.* No subsultus observed; heat increased; pulse 120, quick and regular; respiration 30, high, irregular; same stupor, but sometimes he asks for drink.

*4th.* Coma alternating with delirium; convulsive movements of the limbs at noon; the other cerebral functions carefully examined offered no change since the 3d, still constipated; abdomen retracted, the same complaints on pressure as on the rest of the surface; no plaintive cries, or cough or dejection; urine twice or three times in the

day, as previously voluntary; pulse at 5 o'clock 136, small, quick, and regular; respiration 20, irregular and high. Same potion of  $\text{Zj.}$  boric acid to  $\text{Zv.}$  of vehicle; 2 pediluvia with mustard; milk.

5th, 8 A. M. Agitation and delirium during the night; same decubitus, knees more elevated; face paler; eyes more hollow; mouth a little opened, not evidently distorted; eyes closed habitually, same state of pupils; ill humour if touched; no rigidity of the muscles; sensibility of the skin generally augmented; the purple spots noticed at his entrance have now nearly disappeared; answers rather more distinct; cephalalgia; no subsultus; abdomen retracted—he complains when pressure is made upon it; thirst; deglutition easy; he never asks for food; constipation; skin hot; pulse 104, quick, small, regular. R. Calomel, gr. v. in three doses at two hours interval; enema with  $\text{Zss.}$  of castor oil; sinapism to feet, twice; potion with boric acid.

6th. Delirium during the night; same decubitus; mouth at present slightly deviated towards the left side; face pale; lips red, not swollen; eyelids adhering from the dried secretions; pupils dilated; strabismus doubtful; sensibility diminished, movement as before; no subsultus; coma more profound; answers extremely rare; skin hot; pulse 119, trembling, feeble, irregular; respiration irregular, high, stertorous, 20 per minute; abdomen retracted, indolent; no dejections. A drop of croton oil; blisters to the legs. Deglutition easy; the croton oil was followed by a copious evacuation half an hour afterwards; but the same coma which existed since 7 o'clock in the morning continued; no convulsions nor cries.

7th, 8 A. M. The same symptom continued during the evening of yesterday; some involuntary movements of the arms were observed; mouth closed, both commissures depressed, the left more than the right; pupils equal, less dilated, perfectly insensible to a strong light; insensibility complete without rigidity of the right limbs, the left are less insensible, not rigid; some vague motions of the arm occasionally; no subsultus; no replies; deglutition still possible; skin cool; pulse feeble, trembling, but regular, 180; respiration stertorous, 43; abdomen very retracted, indolent; another copious dejection during the night. An hour later the pulse was insensible.

Death at 3 P. M.

*Autopsy the 9th, forty-two hours after death.*—*Exterior.* Slight rachetic deformity of the knees and feet; rigidity of all the limbs, especially the inferior; slight lividity of the thighs and posterior parts of the body, which is pale in general; slight emaciation.

*Head.* A little blood flows from the exterior of the dura mater; longitudinal sinus empty; arachnoid very dry on the convex surface

of the brain, no serosity beneath it; convolutions of the brain flattened; pia mater injected, especially posteriorly in the large veins, it may be detached without tearing the cortical substance. The arachnoid upon the convexity is neither transparent, nor granulated. *Base*, presents a general yellow or straw colour in its middle portion, including the pons varolii, medulla oblongata, a part of the anterior and middle lobes of the cerebrum, the polygon behind the optic nerves, and nearly the whole of the inferior face of the cerebellum. The arachnoid in the yellowish portions has lost its ordinary polish on its free surface, and presents beneath it, (that is, in the pia mater,) a yellowish concrete, firm matter, similar to concrete pus, and not very friable. The thickness of this substance or false membrane is very variable—near the commissure of the optic nerves it is about a line, diminishing towards the anterior and lateral parts of the cerebrum. The anterior lobes of the cerebrum adhere together by a numerous net-work of vessels; they cannot be separated without tearing the cerebral substance. Between the crura of the cerebrum, and beneath the yellowish substance described, we found an ecchymosis of blood which penetrated into the substance of the crura along their internal face to the thickness of one to two lines; the same infiltration of blood into the cerebral substance extends continuously into the two fossæ of Sylvius to a greater degree and for a more considerable distance in the right than the left. The sides of the fossæ adhere by abundant filaments formed apparently by vessels and the yellowish concrete substance. The optic nerves adhere strongly to the brain. Arachnoid in general may be detached without injuring the cortical substance. Lateral ventricles contain about three ounces of limpid serosity in the two cavities. Consistence of the cerebrum normal, cortical substance moderately coloured; the medullary a little dotted with blood—the part of the crura nearest the ecchymosis is a little yellowish but firm. Cerebellum pale, firm; arachnoid rather more adherent than on the cerebrum. Pons varolii and medulla oblongata firm, pale. Foramen of Munro dilated, fornix and septum lucidum as well as the three commissures retain their usual aspect. Spinal marrow firm, white.

*Abdomen.* Stomach containing a dark-coloured mucous liquid; mucous membrane grayish, neither mamillated nor injected; consistence normal; strips three to five lines in great tuberosity, six to eight on the faces, one to two inches on the small curvature. Duodenum yellowish, containing very few crypts.—Small intestine. Upper half coloured yellow by the contents; the valvulæ a little greenish; no redness excepting at the lower part of the ileum, which offers some arboriza-

tions; consistence every where good; glands of Peyer little prominent, of the same colour as the adjoining membrane; isolated follicles not noted; mesenteric glands firm, not tuberculous, of the usual size.—Large intestine. Contents not noted; cæcum and ascending colon offer numerous arborizations which cease in the transverse colon, the membrane afterwards is pale; consistence every where good; strips more than an inch in length.—Liver of middle size, of good consistence, not fatty; gall-bladder contained a dark bile.—Spleen three inches in length, containing a small tubercle.—Kidneys firm, livid.—Bladder contracted.

*Thorax.* Lungs a little engorged with blood, especially on the left, but erepitant and permeable, not hepatized nor tuberculous; some bronchial glands of different size are tuberculous, yellow, and friable. Heart presented nothing remarkable—details not noted.

The previous history in this case is more perfect than can be obtained from many children at the *Enfants Malades*; the child was born of parents subject to convulsions, the same disposition seems to have been transmitted to their children. The subject of this observation was intelligent, lively, but irritable and delicate, subject to cerebral symptoms when other diseases existed, each application of leeches augmented instead of diminishing the convulsions. An accidental fall upon the head seems to have been the exciting cause of the symptoms which preceded death. These followed an ordinary course—vomiting, constipation, somnolence, delirium, coma, with convulsions. The anatomical lesions of the arachnoid were very marked, but the brain presented a lesion of its substance, consisting in a yellowish colour of the crura without softening, and an ecchymosis of considerable extent. Some tubercles existed in the bronchial glands, but not elsewhere. The intestinal canal offered nothing remarkable, notwithstanding the habitual diarrhœa.\*

\* The following details were learned as to the health of the relatives of the child. His mother is now 28 years of age, well formed, but pale. She menstruated at 15 years, was married at 18, is subject to convulsions from infancy, which increased in frequency from the age of 9 to 15 years, since then they have been less frequent, but not influenced by pregnancy; within the last three or four months she has had no attacks. She has had four children, the subject of the observation is the second; two others died of convulsions, at the ages of fourteen days, and eleven months: the youngest, a little girl six months old, is still living; she had a number of convulsive fits during the first six weeks after birth, she was then vaccinated, and has had none since. The father was also subject to attacks of epilepsy in childhood, but not since the age of 15 years. Neither the paternal nor maternal grandparents were known to have had convulsions.



*Observation II\*.*—(Service of M. Jadelot.) Deucar Theodore, eleven years old, born at Marseilles. Spare habit, eyes and hair dark colour, habitual health good excepting some scrofulous abscesses on the limbs, the cicatrices of which are visible, one or two still present fistulous openings; lives in a damp porter's lodge with his parents, and within the last three months has been frequently obliged to sit up at night with his sick mother.

*July 8th, 1832.*—He was perfectly well, had not been up during the preceding night, went to bed in the evening, slept well until 5 o'clock in the morning, when he awoke with a sensation of dizziness, every thing seemed to turn around him, at the same time he was taken with nausea, and vomited a quantity of green bitter matter, followed abundant perspiration without previous chill. The vomiting was repeated ten or twelve times during the day. At 7 A. M. frontal cephalalgia, very intense, persisting during the whole day, with dizziness, anorexia, great thirst, a little colic, but no evacuations, urine abundant. During the night of the 8th and 9th he was awakened once or twice by the violence of the head-ache.

*9th.* Increase of the cephalalgia and vertigo, vomiting but only in the morning, eyes painful in a bright light. At 9 o'clock severe pains in the abdomen, and followed by one evacuation. At 11 chill with vomiting, afterwards fever and sweating which lasted almost all day. At 1 P. M. he is brought to the hospital. From that moment the dizziness ceased, but the cephalalgia was still very intense, thirst greater, urine abundant, perspiration copious during the whole night.

*Actual state, July 11th, morning.*—Coloration of the face and body generally natural; intelligence. (Preceding details furnished by himself.) Answers prompt, distinct; frontal cephalalgia moderate; he has never felt formication or drowsiness; pupils contractile, light easily tolerated; thirst intense; appetite doubtful; neither nausea nor colics; abdomen well formed; tongue rose at the edges, villous and pale at the centre, moderately moist; no cough; respiration pure; pulse 72, developed, regular; skin hot and moist, appearance of good health, but sensation of feebleness; thinks he could not walk. Venesection,  $\frac{5}{8}$  viij.;  $\frac{1}{4}$  enema with gtt. iv. laudanum of Sydenham; poultice to abdomen; infusion of mallows; milk. No change during the day except profuse perspiration in the afternoon, in the evening vomited several times after taking some broth; sleep very sound. On the morning of the 12th cephalalgia rather more severe, no dizziness,

\* Read by M. Mannoir to the Société Médicale d'Observation, the 27th October, 1832.

thirst moderate, appetite good, abdomen yielding, not tender; tongue not so white, skin moist; pulse 80, less developed than yesterday. The blood drawn from the arm presents a thick, firm, black coagulum, not buffed, serum moderately abundant. Tisane of liquorice and nitre; common enema; cataplasm to the abdomen, with  $\mathfrak{z}$ i. laudanum of Rousseau; broth.

From the 13th to the 17th the state of the patient improved daily, after a warm bath on the 13th the cephalalgia disappeared, the appetite was good, thirst natural, dejections natural, no chills or perspiration or pain in any part of the body; pulse counted in the morning was always between 70 and 80, regular; one vomiting the 16th after taking some soup which he disliked; he asked permission to leave his bed.

On the evening of the 17th no change having occurred during the day, the patient is suddenly affected with severe frontal cephalalgia without previous chill, the pain was most severe on the left side; the eyes became painful on exposure to the light; night agitated.

18th, at 9 A. M. Pain in the head continues, the patient is dejected, face rather pale than red, eyes half-closed, painful when exposed to the light, pupils contractile, equal, sight natural, slight somnolence; intelligence perfect, anorexia, no thirst; abdomen yielding, not tender; skin hot and dry; pulse 68, full, regular; during several of the preceding evenings it was a little more frequent, with increase of the heat of the surface. Eighteen leeches to abdomen, emollient poultice afterwards, fomentations of mustard to legs; tisane of liquorice; tartaric lemonade.

On the 19th the same cerebral symptoms continued, especially the head-ache which was constantly more severe on the right than the left temple; somnolence great, the patient attributes it to the bright daylight; answers obtained with difficulty; expression of pain, nausea, and two liquid stools this morning without colic; during the night cough and frequent sneezing; the respiration is pure but feeble; he complains of pain in the throat in swallowing; pharynx natural; pulse 60. Six leeches behind the left ear, ten behind the right; cold compresses to the head; sinapisms to legs; tisane.

20th. Pain in the head persisted after the application of the leeches, but diminished during the night; eyes constantly closed; answers slow, reluctant, but perfectly correct; cough and pain in the throat diminished; sinapisms to eyes; emollient cataplasm to abdomen; vinegar poultices to the ankles.

21st. Without pain when at rest, but as soon as he is touched or moved, he cries and complains of suffering pain. Right eye painful,

he resists strongly any effort to open it; left eye not painful, opened voluntarily; pupils natural, contractile; head inclined towards the right side; both arms equally sensible to the touch, muscles contract with equal force. Friction to the chest, with tinct. camphoræ, et vini einchonæ, aa. ℥iv.; ether acet. ℥j.; infusion tigliæ; vinegar poultices to feet; warm bath; musk, gr. iij. in six pills.

22d. Less cephalalgia; motion still very painful; somnolence; the child neither speaks nor moves during the whole day; says he is thirsty, and desires food; abundant perspiration yesterday, especially in the evening; night tranquil. Same prescription.

23d. Amelioration continues; pain in the head moderate, confined to the right temple; motion more easy; decubitus indifferent, variable; less drowsy, but answers still unwillingly; perspiration again profuse last evening; appetite and thirst great; tongue rosy at the edges, yellowish and villous at the centre, moderately moist; lips encrusted for some days past; breath fetid since his admission into the hospital. During the last five days the pulse was between 60 and 70, full, and regular; slightly irregular on the morning of the 23d; respiration natural; skin always hot and dry, excepting during the sweat just mentioned; heat increased in the evening; no vomiting; a little nausea the 20th; tongue rosy, pale, villous and moist. Every day from two to five liquid dejections without colic; thirst generally moderate; urine abundant; abdomen yielding, not tympanitic nor tender; face emaciated, not highly coloured; expression sad, indifferent; eyes almost constantly closed.

On the morning of the 24th he said he was much better, and felt no pain. Sleep natural; somnolence much diminished; answers not so slow; skin warm and moist; pulse 64. At 2 P. M. his parents visited him, and found him with his eyes opened, perfectly awake, but notwithstanding the most pressing entreaties they could not obtain from him a single word of reply. No delirium during the night.

25th, at 9 A. M. Decubitus on the left side; the left cheek reposing on the palm of the hand; inferior extremities semiflexed; attitude perfectly natural; air of complete indifference, and half stupor; not the least answer; he seems not to perceive that questions are asked; face slightly coloured, especially at the cheeks; no distortion; eyes half open, move naturally in their orbits; the right pupil more than two lines in diameter, even when exposed to a bright light is slightly irregular, and nearly insensible; the left is smaller, contractile, regular; expression of pain, and frowning when his head is touched; much more resistance in extending the left than the right arm;

movement however still voluntary, for the patient replaces the left hand on his head immediately after its release; sensibility preserved in both superior extremities, but somewhat obtuse in the lower; respiration 30, regular, a little elevated; pulse 62, regular, rather full; temperature of the face and arms natural, that of the body and lower extremities a little elevated; skin dry; abdomen hot, tympanitic; upon pressing it the muscles contract without causing grimaces; one rose, lenticular spot and two or three particles on the abdomen. Blister to the back of the neck; fomentations of mustard to the legs; musk, gr. iij. in six pills; frictions with acetic ether. Same state during the day and night; no delirium; stools and urine involuntary.

26th. Decubitus dorsal; sensibility of upper extremities equally obtuse, the right is in a state of nearly complete resolution, and falls heavily when raised up, but still capable of some slight voluntary movements; the left sensible to pain, and contractility natural, but a few moments after the examination it offered a marked contraction, the wrist and forearm in semiflexion, impossible to extend, when the effort is made the marks become tense and resist most strongly; sensibility not very obtuse in the lower extremities; motion voluntary; skin hot; pulse 80, rather full; respiration 30, high, regular, noisy at times; slight cough; brownish froth on the lips; breath very fetid; abdomen flattened, resisting. Calomel twelve grains in three doses; eight leeches to the right temple. Same state; but respiration more stertorous. Death at 9 P. M.

*Autopsy the 28th, thirty-eight hours after death.*—Temperature rather cool; lividity of the whole posterior part of the trunk; abdomen greenish.

*Head.* Blood rather abundant at the exterior of the dura mater; a long semitransparent fibrinous coagulum in the longitudinal sinus; some very slight adhesions between the cerebral arachnoid and that of the dura mater; general aspect of the convolutions flattened, and rather moist; the large cerebral veins of both hemispheres, but especially the left, are engorged with blood, between them are a multitude of fine arborizations giving to the external surface of the brain a general red colour; around the large veins mentioned, but not in the intermediate space, the arachnoid is of a light straw colour, semiopaque, as if a very small quantity of pus had been deposited around these vessels; this appearance is irregularly distributed on the two hemispheres, more marked on the lateral and middle part of the right hemisphere, where upon cutting through the arachnoid little masses of that substance of the appearance and consistence of buffy

coat of blood can be detected from the surface of the brain; no infiltration beneath the arachnoid; pia mater detached with difficulty, tearing a little the cerebral substance, especially on the right side; the cortical portion is of a violet tint, evidently a deeper colour than in the natural state, but of good consistence, except in the right temporal region a little above and anterior to the ear, where it seems a little softened; below this point it has a slightly yellowish tinge, and forms a little mass, of the size of a large bean, rather hard, traversed by a large number of voluminous vessels, whose orifices are open, and contain blood and not pus; the same aspect is presented in the fossa of Sylvius, into which this yellowish hard substance is introduced, it is a line and a half thick, and traversed by open vessels, strongly adherent to the two lobes forming the fossa, and surrounded by a thin layer of softened cortical substance.

At the *base* of the brain the yellow semi-opaque matter existed around the vessels which enter the two fossæ of Sylvius, but to a much less degree on the left than the right side; the same appearance was found around the veins of that portion of the superior face of the cerebellum, without softening of the subjacent cineritious substance. The medullary substance of the brain is moderately dotted with blood, of a light violet tint; each lateral ventricle contains two or three tea-spoonfuls of limpid serosity; the central portion, especially the posterior pillars of the fornix and the septum lucidum, are very easily torn, a touch reduces them into little filaments floating in the serosity of the ventricles, their whiteness is perfectly preserved; plexus choroïdes pale; corpora striata, optic thalami, annular protuberance and cerebellum offer no lesions; the sinuses of the base of the brain are filled with black blood half liquid, half coagulated.

*Thorax.* Pericardium contains half an ounce of transparent serosity; heart, size of the fist of the subject; right cavities containing much coagulated blood, and a little fibrine; the left very little blood; parietes of the left ventricle from four to five lines in thickness, those of the right two; left pleura contains an ounce of reddish serosity; left lung without adhesions, retains its form after removing it from the chest, of a general pale violet colour; several groups of blood-vessels are remarkably developed beneath the pleura at the lower part of the upper lobe; the pulmonary tissue in the upper lobe is reddish-brown, very crepitant, spongy, containing little blood; the lower lobe offers the same aspect in the greater part of its extent, in some points only are nuclei of a pale colour, the section is granulated, contains no air, and is very friable; bronchi pale, containing some puriform mucus; a bronchial gland on the outer side of one of

the largest, is converted into yellowish and blackish cretaceous matter; right pleura contains no serosity; the upper half of the right lung presents some cellular adhesions easily broken; the surface is of the same colour as the left, and presents some bands of interlobular empyreuma; pulmonary tissue fawn colour, containing little blood in the upper lobe, but more in the lower, though without traces of empyreuma. *Larynx* pale, perfectly healthy, containing a little purulent mucus; same contents in the pharynx.

*Abdomen.* No serosity in the peritoneum; stomach of middle size, contains three or four ounces of black liquid, mixed with little blackish flocculi; mucous membrane presents a marbled-rose-colour with some large arborizations, and a little dotted redness along the small curvature; the membrane yields even in the large tuberosity strips of two to four lines, more than an inch in the small curvature, and five or six lines every where else; slight mammillation near the pylorus; small intestine brownish externally, containing a little dark yellow mucus; invagination two or three inches in length in the middle of the intestine; a little brownish matter, and one lumbricus in the last half of the intestine; a few isolated crypts are visible at the commencement of the jejunum, but none near the end of the ileum, in which are eight or ten agglomerated glands, irregular, little prominent, of the same colour as the intestine, dotted with black points; general colour of the mucous membrane like that of the contents; thickness natural; consistence good; strips three or four lines in length in the jejunum, six to eight in the ileum, the last half of which presents some delicate arborizations; mesenteric glands small, grayish-rose colour, firm; large intestine contracted, containing some soft fecal matter; mucous membrane pale, slightly rose coloured, with some scattered arborizations; follicles with black central points visible beneath the membrane; thickness and consistence normal, strips eight to twelve lines. Liver extrude a little beyond the ribs, brownish-slate colour, firm, containing little blood. Spleen three inches long, pale claret tinge, good consistence. Kidneys firm, livid red, containing much blood. Bladder contains half a glass of urine with an abundant flocculent sediment; internal membrane finely injected, firm, not thickened.

I am indebted for this observation to my friend Mr. Mannir, of Geneva, who collected it during the period we were both engaged in observing at the children's hospital. It is relative to a scrofulous child who had not perfectly recovered his health, and besides the unfavourable circumstances of a damp, gloomy lodge, and the nearly absolute privation of exercise to which a large number of the children

of porter's are condemned at Paris, he was obliged to undergo unusual fatigue in nursing his mother. The affection offered three distinct periods, the first characterized by vomiting which lasted two days, dizziness, somnolency, sensibility of the eyes, frontal cephalalgia, these symptoms diminished perhaps partly from the effects of the depletion. The second period, we remark return, and augmentation of the cephalalgia, especially on the right side; the cerebral functions are not more affected than in the first period, there is neither delirium nor alteration of the sensibility or motility; the third period was announced by the loss of consciousness, and the paralysis of sensibility of the upper extremities, with contraction of the left side, and complete relaxation of the right. The whole duration of the disease was eighteen days, the complications were slight and confined to a little diarrhœa. The anatomical lesions consisted in the infiltration of purulent matter at the base of the brain, but not considerable effusion into the ventricles; the cerebral substance was softened in a limited extent near the surface, and also the central part of the brain, but the nature of the latter lesion is not yet satisfactorily known, and certainly in the present case, in which the autopsy was made a considerable time after death, might have existed independently of any cerebral affection. The thorax presented nothing but some cretaceous matter in one of the bronchial glands, a fact insignificant in itself, but highly interesting when viewed in connexion with the scrofula with which the patient had been affected. The bronchial glands in children frequently present the tuberculous degeneration without traces of it elsewhere, a circumstance not observed in adults; attention should be turned towards these glands at all the periods of life, as the history of their lesions may aid in clearing the important question of the cure of tubercles. The abdominal viscera offered nothing remarkable. The treatment was equally unsuccessful in this case as in those which follow.

*Observation III.\**—A boy, fifteen years of age, entered the Salle St. Jean, the 6th of August, 1832. (Service of M. Jadelot.) His father communicated the following details. He left the Hospital of La Pitié six weeks before his entrance; he had there been treated during a fortnight for cholera, which still was epidemic at Paris. He has never perfectly recovered his strength, although he returned to his work, (cabinet-maker,) but was unable to perform as much labour as usual. He complained of frequent pains in the head and abdomen.

\* Read to the Société Médicale d'Observation, September, 1832.

Four days before his admission he was taken with nausea and vomiting, twice repeated, of green bitter matter, at the same time he had diarrhœa during two days, frontal cephalalgia, and insomnia, with slight cough. At his entrance he complained of cephalalgia, intelligence dull, answers extremely vague; chest sounds well on percussion; respiration pure; abdomen yielding, well formed, but painful, especially on pressure. During several days regular notes were not taken. The patient constantly complained of pain in the abdomen without either diarrhœa or tympanitis. M. Jadelot directed the day after his admission twenty-five leeches to be applied to the abdomen, and cold water to the head. The 9th he was bled; delirium came on the following night; agitation great before the venesection.

12th. Persistence of delirium. Eighteen leeches behind the ears, and ice to the head.

13th. Delirium augmented; constipation persists since his entrance. Venesection,  $\bar{\text{v}}\text{viii}$ .; sinapisms to legs; ice to the head. After this date the observation was collected regularly.

*Present state, July 14th.*—Skeleton well formed; moderate embonpoint; complexion sallow; decubitus variable; vague unmeaning movements of the arms; stupor, accompanied with agitation, and frequently delirium characterized by unmeaning cries and words; insomnia nearly complete; frequent sighing and cries, but not apparently indicative of pain. He understands questions in a loud tone, and answers correctly, but the delirium is only momentarily interrupted; frontal cephalalgia; sight troubled; eyes dull, half-closed, but pupils contractile, not dilated, of natural appearance; no strabismus; hearing imperfect, with tinnitus aurium; sensibility and movement of all the limbs natural; face not distorted; heat moderate but dry; neither sudamina nor typhoid spots on the skin; tongue brownish, a little dry; teeth fuliginous, mouth remains half opened; abdomen retracted, presenting nothing on the exterior but the leech bites, some of which are in suppuration; pulse 80, a little irregular; respiration very irregular, alternately very frequent or slow; percussion of the chest sonorous anteriorly; respiration pure. Infusion of marsh mallow with syrup of ether; common enema; cataplasm to abdomen; diet; with grs. v. calomel in the evening.

15th. Delirium and insomnia during the night; this morning at times gay and laughing, at others sighs and plaintive cries; constipation persists; urine involuntary; pupils contractile, the left although exposed to a more direct light more dilated than the right; subsultus tendinum very frequent at the wrist; pulse 84. Warm bath; cold water to be applied to the head, and cataplasm to the abdomen; com-



mon enema; sinapisms to legs. The pulse was at 92 in the evening; respiration 28; tranquil in the bath, but subsultus tendinum rather increased; no amelioration followed it.

16th. Slept a little; delirium continues with the same characters; some floccilation, and efforts to detach his linen by pulling it forcibly; no sighing, but delirium less easily interrupted; answers less connected; pupils much dilated, especially the left, without strabismus; he moves his right arm much more than the left—both are generally semiflexed, resisting an effort to extend them; rigidity most considerable in the left arm, where it was doubtful on the 15th, but he flexes both hands at will, the left less strongly than the right; the same slight rigidity exists in the lower extremities, especially the left; hicough at intervals; abdomen tympanitic, a little tender on pressure; pulse 96, regular, quick, moderately developed; tongue dry, brown at centre, red at the edges; teeth as before. Blister to back of neck; stimulating frictions to chest and arms; emollient cataplasm to the abdomen; cold water to the head; tisane with nitre.

*Evening.* Tremor extending to nearly all the muscles of the body; pulse 96; no other change.

17th. Night agitated; delirium has now changed in character, less noisy, but more difficult to suspend, marked by muttering rather than cries; tremor of face and limbs continues; subsultus frequent; rigidity of the muscles of the face, head, and neck; muscles of the jaw resist strongly any effort to depress it, but afterwards he opens the mouth voluntarily; sensibility always nearly natural; pupils directed upwards, irregularly dilated, but equal; pulse 92, a little irregular, but quick and resisting; tongue less dry; skin hot and dry; abdomen tympanitic. Tisane of liquorice and nitre; inf. tiglicæ; enema of starch with gtt. v. laudanum; milk diluted.

*Evening.* Coma more intense; rarely complains, and then feebly, and half articulately of pain in the head; countenance entirely changed; sensibility a little diminished on the left side.

18th. Tremor constant and general, causing a general appearance very like that of a person shivering after a cold bath; subsultus frequent; jaws firmly closed, very rarely opened; floccilation; no answers; rigidity marked in both arms and in the left leg; sensibility diminished in the limbs that are rigid; pulse 120, difficult to examine on account of the frequent subsultus; tympanitis extreme; grimaces when the belly is touched. Syrup of ether; stimulating frictions; inf. tiglicæ. Pulse 144 in the evening; no cries; tremor persists. Same state in other respects.

Death on the 19th at 5 A. M.

No. XXVI.—Feb. 1834.

*Autopsy the 20th, twenty-nine hours after death.*—Exterior. Emaciation slight. Abdomen greenish, meteorized, two or three ulcerations corresponding to leech bites exist at the epigastrium. No œdema. Rigidity of the limbs moderate; some violet strips at the posterior part of the trunk and limbs; muscles firm, red. Placing the subject on the belly, an abundant greenish yellow liquid flowed from the nose and mouth.

*Head.* A little blood on the exterior of the dura mater; longitudinal sinus entirely empty; no effusion into the great cavity of the arachnoid nor beneath the membrane at the convex surface of the brain; pia mater can be easily detached from the brain, its vessels are moderately distended with blood.—*Base.* The arachnoid covering the commissure of the optic nerves is yellowish, opaque, and presents a thickness of three-quarters of a line, caused by the effusion beneath it of a pale yellow matter resembling concrete pus and very adherent. The arachnoid covering the anterior part of the annular protuberance presents the same semi-opaque aspect, but with less thickness. The part of the membrane upon the superior face of the cerebellum is also of the appearance just described, but only in the surt of crescent formed by that organ near the tubercular quadrigemina, that is the most anterior part of it. From this sort of crescent the yellow substance extends upon the cerebellum to the breadth of three or four lines, until the arachnoid gradually resumes its transparency. The membrane is thickened but not yellow in the fossa behind the crura of the cerebellum, in the rest of its extent it retains its ordinary aspect, except on the lateral part of the right hemisphere where it is a little rosy, apparently from ecchymosis. The large vessel contained within the fossa of Sylvius of the right side, is filled with a black and firm coagulum, and surrounded with a dense whitish matter, grating beneath scalpel, and except in colour resembling the yellow substance described: it forms a sort of sheath around the vessels, and agglutinates the parietes of the scissure. A similar lesion but to a less degree exists on the left side. The convolutions on the summit of the brain are a little flattened, the cortical substance pale, and the medullary very little injected. Brain throughout firm, and of its normal appearance. About two ounces of serosity contained in the two ventricles flowed from an incision into the right. Cerebellum and annular protuberance of normal firmness, very little injected. The arachnoid covering the first inch of the medulla oblongata is a little opaque, hard and thickened. Spinal marrow firm, white without appreciable lesion. Very little serosity at the base of the brain, or in the spinal cavity.

*Neck.* *Larynx* grayish, not ulcerated.—*Pharynx* pale, not ulcerated.

*Thorax.* *Pericardium* contains about an ounce of reddish serosity.—*Heart* flaccid, containing a fibrinous coagolom infiltrated with serosity in the right cavities, a little fluid blood in the left. The whole internal coat of the heart and great vessels is of a livid-rose colour.—*Pleuræ*, each contains a little reddish serosity, some slight cellular adhesions on the left side.—*Left lung* crepitant, distended with air, greenish in some points; tissue in both lobes bright red, light, and contains a certain number of gray semitransparent granulations a little tinged in green, and separated by healthy tissue; no tubercles nor hepatizations. Right lung presents the same aspect, and similar granulations scattered throughout its upper and lower lobes, the middle contains one or two tubercles of the size of peas, not softened. At the bifurcation of the bronchia there is a ganglion of the size of a small walnut, completely transformed into yellow tuberculous matter, marked with dark bands and not softened; a few tubercles are scattered beneath the costal pleuræ.

*Abdomen.* Three or four ounces of reddish serosity in the *peritoneum*.—*Stomach* of moderate size, contains some black liquid; mucous membrane much wrinkled, of a grayish tint, with a few scattered arborizations, not mammillated, but containing within its thickness in the two inches nearest the pylorus an abundance of little white points of the size of pin's heads, scarcely projecting above the level of the membrane; thickness normal, strips from three to five lines in the great cul-de-sac, seven to eight great curvature, and more than an inch in the small; (a long rusty pin is in the midst of the contents).—*Duodenum* tinged by the bile, containing a multitude of muciparus crypts.—*Small intestine* contains some gas, greenish externally, containing in its whole length a moderate quantity of mucous matter, greenish superiorly, but afterwards darker, and nearly black towards the end; the mucous membrane is alternately pale, and dark green in the points where the liquid existed; but in the last half where the blackish matter was found, it is nearly everywhere pale; thickness natural; consistence natural in the first half, strips of eight to ten lines even in the part where the green colour is most intense; in the second half the membrane is very thin, and yields strips only from three to five lines, the cellular tissue is emphysematous beneath it; (perhaps the partial softening is cadaveric;) agglomerated glands of Peyer scattered, but not abundantly in the last half of the intestine, they are slightly reticular, a little elevated; a few near the valve dotted with black points; a very few isolated

crypts of Brunner near the middle of the intestine, where there are some arborizations of small extent.—*Large intestine* distended with gas, containing an abundant black pultaceous matter; mucous membrane of a light greenish-brown in the cœcum, where the strips are eight to twelve lines long; in the ascending colon it is pale, thin, and yields strips of nearly two inches long; in the transverse colon it is brownish, and offers some isolated follicles with central points, giving long and thin strips; in the rectum equally firm, but pale, and a little thicker.—*Mesenteric ganglia* small, pale, firm, not tuberculous.—*Liver* of the usual volume and consistence; tissue pale and containing very little blood; gall-bladder small, containing a little yellowish bile.—*Spleen* nearly four inches long, flaccid, brownish externally, livid internally.—*Kidneys* of the usual size, pale, the two substances very distinct.—*Bladder* distended with urine; some large ecchymoses at the great fundus, and some fine arborizations in the rest of its extent; greenish in points, with an odour of putrefaction; mucous membrane yields strips eight or ten lines long, even in the reddest portions; the ecchymosis is common to the mucous and cellular tissue.

This case is defective as to the previous history of the patient, and a detailed examination was only made during the four last days of his life. The subject of this case was the oldest observed, the meningitis began in an enfeebled subject who was still suffering from the sequelæ of cholera, and as the autopsy proved, he was tuberculous; it began by *vomiting*, slight diarrhœa succeeded by *constipation*, cephalalgia and insomnia. Delirium supervened on the eighth day, augmenting constantly until it was succeeded by profound coma previously to his death, which took place on the 18th. The other cerebral symptoms were rigidity of the limbs, especially of the left side, beginning on the 14th day; floccilation, dilatation of the pupils, subsultus tendinum, and shivering of the whole body; no convulsions occurred during the hours I passed in the ward, (four or five daily.) Deglutition not noted; abdomen tympanitic, apparently sensible; constipation; slight cough; but pure respiration during the whole course of the disease, which pursued a regular march, the symptoms gradually increasing in intensity until his death. The treatment which was not deficient in vigour at the beginning produced no sensible effect. The anatomical lesions of the brain consisted in an opacity of the arachnoid at the centre of the base, and in the fossa of Sylvius, especially on the right side; but the cerebral substance was every where perfectly firm, and without the least appreciable lesion; the ventricles containing a moderate quantity of serosity. On the convex sur-

face the arachnoid was remarkably dry, and adhered closely to the convolutions which were evidently more flattened than usual. The other viscera offered nothing remarkable, excepting the existence of tubercles in the lungs and bronchial glands. The commencement was similar to that of the last case, but here there was a constant but gradual augmentation of the symptoms, delirium supervened on the eighth day; in other respects the analogy is very close, both in the symptoms and anatomical lesions. But I shall not extend the remarks on each case, as the general summary will necessarily contain the most condensed and important statement of the results obtained by the comparison of the individual observations.

*Observation IV.* (Female ward; service of M. Jadelot.)—Erlemont Stephanie, five years and a half of age, entered the 18th of June, 1833. Born in French Flanders, but now living in the Rue St. Jacques. Before her arrival at Paris in September last, she had enjoyed perfect health, excepting an intermittent fever which lasted during several months last autumn, (common in her province.) She has been vaccinated, has not had measles, or any eruptive disease of the scalp, has never had convulsions nor worms, does not cough habitually, and is not subject to diarrhœa; appetite and digestion good; her health and embonpoint were not impaired at her arrival at Paris, notwithstanding the indifferent food to which the distress of her parents had confined her for some months. Since her residence in the capital, food abundant; intelligence developed; some lymphatic glands of the neck a little augmented in size within three months.

In the month of February her parents observed that she limped; a tumour formed on the instep of the left foot, which supplicated in the month of March, and has constantly discharged a purulent matter since that time. She was confined to the house on account of the affection of her foot, but was perfectly gay and playful; appetite and digestion excellent.

The 15th she was perfectly well; ate as usual at four o'clock; slept well until four o'clock in the morning, when her parents were awakened by the same plaintive cries she has so frequently uttered since; they then perceived that the left arm and leg were agitated by convulsive movements, but the members of the right side were stiff and motionless. Replies slow, reluctant, confined to yes and no; cries frequent, especially when agitated by the movements of the left side; mouth drawn to the left side during the convulsions, and permanently distorted on the 17th—left eye opened in the attacks; strabismus not perceived; vomiting only on coming to the hospital in the carriage; constipation since the beginning; she has eaten nothing but a

little soup with repugnance; no thirst; she drinks sometimes when a cup is put to her lips, but often refuses; heat of skin great on the left side of the body, not on the right; sleep troubled.

On the 19th of June she was not examined in consequence of her being placed by a mistake in a ward not appropriated to acute affections. The symptoms as far as noted did not differ from those observed the 20th when I examined the patient.

*Present condition, June 20th, at 2 P. M.*—Hair chesnut-coloured; embonpoint moderate; decubitus dorsal; head inclined to the right side; eyelids equally separated, leaving an interval of a line between the upper and lower; nostrils equally dilated, not in motion; lips violet but pale, and rather thick; the two commissures of the mouth depressed, mouth drawn a little towards the right side; sleep heavy, almost stupor; face pale: in awakening she opens her eyes and looks around her, the face becomes more coloured; pupils equal, regular, contractile, without strabismus, look fixed; hearing evidently preserved, but she seems not to understand the questions; humour tranquil; she moves her left arm and hand, frequently closes her fingers upon the hand; movements of the left leg equally free; sensibility on that side natural, neither apparently increased nor diminished; right arm motionless, falling when raised up, but always in the direction of the flexor muscles; rigidity and semiflexion of the elbow and wrist, but not of the fingers; sensibility very feeble, on pinching the skin smartly she withdraws the arm but very little; right leg slightly flexed, lying on its external face, rigid, and very little sensible on pinching the skin; jaws closed, rigid, sometimes movement of the lower as if triturating food; head slightly inclined backwards; no replies nor articulate sounds, but sometimes vague, low cries; deglutition nearly natural, slow; no dejection since her admission. (Abdomen not noted.) During the examination her father came to visit her, she recognised him without speaking; ate some strawberries; demanding more by gestures of the left hand. Sinapisms to legs; blister to the back of the neck; infusion of mallows. Yesterday eight leeches were applied behind the ears, another similar application had been made to the temples before her entrance.

*21st, at 9 A. M.* Pulse varying in frequency from 64 to 72, a little irregular; heat very moderate.

*3 P. M.* Decubitus dorsal, abandoned; face pale; lips livid, pale, thick; eyes opened at times; pupils contractile, equal, of natural size; a slight change of position renders the face injected; nostrils open, not in motion; head inclined backwards; same state of the right arm and leg as yesterday, but the rigidity is now extended to the fingers,

which are strongly flexed; left arm and leg still sensible; agitated frequently by movements, which seem voluntary; no subsultus; sight preserved, the eyes follow the movements of the hand or other objects held before them; no replies, cries not heard, but sighs very frequent; deglutition easy; no dejections. (Urine not noted.) Abdomen yielding, insensible to pressure; percussion of the chest sonorous; respiration pure and expansive. Prescription of the morning. Bladder of ice water to the head; six grains of calomel in three doses; cataplasms with vinegar to the feet; purgative enema; tisane of liquorice and nitre.

22d. Two doses of the calomel were taken last evening, and followed by a large evacuation in the night, (involuntary;) no convulsions.

9½ A. M. Face generally injected, but not of a livid-red colour—swollen since yesterday; lips same aspect; mouth not deviated; she opens her eyes, seems to see, but no longer follows with the eyes the movements of objects before them; pupils not contractile, equal, regular, a little dilated; same decubitus; right arm strongly contracted in all its articulations; the contractions of the muscles in most positions resisting the action of gravity; contraction instantly returning after forcible extension; sensibility increased, she withdraws the arm a little when pinched; the left arm is now rigid, perhaps more than the right; the elbow, wrist, and fingers strongly flexed, sensibility seems less than on the right side; rigidity of the inferior extremities slight, but sensibility very feeble; deglutition slow and difficult; no replies, no convulsions, but as previously frequent increase of the stiffness of the limbs with slight spasmodic movements; slight voluntary movements now occur from time to time in the *right* arm; no subsultus nor strabismus; cough loose, rare; skin hot; partial perspiration of the face; pulse 140, regular, very feeble; respiration high, regular, 36; chest sounds well on percussion, anteriorly and posteriorly; mucous rhonchus sometimes heard in the inspirations; palpitations of the heart accompanied with the bellows sound, (*bruit de soufflet*;) abdomen tympanitic, but insensible. Bath with cold affusions on the head; sinapisms to the legs; potion with ether; purgative injections. The bath produced no evident effect.

23d, 8 A. M. Same decubitus; face pale; eyes open, the left more than the right, covered with mucus, but not injected, pupils contractile, natural; nostrils dilate occasionally; mouth slightly open, a little drawn towards the left side; lips livid, pale; insensibility increased; rigidity persists on both sides, but now greater on the right than the left; deglutition impossible; respiration high, stertorous; no evacua-

tions; pulsations of the heart very feeble; chest sonorous anteriorly; mucous rhonchus very abundant on both sides; heat rather elevated; abdomen retracted, indolent. Tisane; cataplasms to feet.

4 P. M. Pulse irregular, trembling, 96; respiration stertorous, high, 48; face more injected than in the morning, sensibility diminished.

Death at midnight.

*Autopsy the 24th, twelve hours after death.*—*Head.* No blood on the exterior of the dura mater; a little serous blood without coagula in the longitudinal sinus. Arachnoid humid, but offering no serosity in its great cavity. Pia mater easily detached from the convolutions without destroying them; not at all injected; very little serum in some of the large veins only; arachnoid not thickened or granulated.—*Base of the brain.* The arachnoid around the commissure of the optic nerves, and in the space of rather more than half an inch posteriorly, was thickened, opaque, milky, but not offering a pseudo-membranous concretion. The left fossa of Sylvius presented a small number of hard, whitish granulations around the vessels, but neither false membranes nor injection. The right fossa presented a much larger number of granulations, forming clusters around the vessels; no false membranes; a little more injection than on the left side, but not to a considerable degree; very little serosity at the base. Cortical substance every where of a rosy tint, and very firm. Medullary moderately injected, firm. The lateral ventricles contained about three drachms of limpid serosity; the septum lucidum and fornix very soft but not diffuent; more easily torn than in the majority of subjects examined even at the expiration of a longer interval after death. Cerebellum quite as firm as the brain, not much injected. Annular protuberance and medulla oblongata firm and white. The whole cerebral mass carefully examined, contained no tubercles.

*Spinal marrow.* Vertebrae cautiously opened with the double saw of M. Charrière; after the section had been completed the spinal marrow was seized at the base of the brain, and drawn a little towards the occipital foramen, after a very moderate traction it broke at the base of the cervical vertebrae. In incising the dura mater, which was covered with some coagula of blood, the softening was found to exist in the extent of two to three inches in the part corresponding to the inferior cervical and superior dorsal vertebrae. The medulla retained its usual whiteness; the cortical and medullary portions distinct, but rather less so than usual; no vascular injection. In tearing the medulla by either of its extremities into ribbons, (which in the ordinary state can be done throughout the whole length,) they broke at the



softened part. Little scrocity beneath the arachnoid, which was every where rather more closely adherent than usual. Larynx and trachea rose-coloured, not ulcerated.

*Thorax.*—Left lung slightly adherent; at the upper and posterior part of the lower lobe it is crepitant; the upper lobe of a rose-fawn colour, and the posterior two-thirds of the lower of a dark red; at the part of this lobe a little cluster of opaque tubercles of the size of small peas surrounded by a hardened impermeable tissue not granulated; the rest of the lobe is merely engorged with blood. Right lung contains some blood in its posterior part, but offers neither dilatation of the vesicles, hepatization, nor gray granulation. Bronchi rose-coloured, not dilated, containing a little mucus. Bronchial glands in part converted into tuberculous matter.

*Abdomen.* Stomach of middle size, containing a little mucus. Mucous membrane offers a general rose tint without marked injection; aspect polished, not mammillated; neither increase nor diminution of its thickness; consistence perfect; strips two inches in the small curvature, six to eight lines in the great, four or five in the great tuberosity. Small intestine of ordinary size, containing a yellowish liquid matter but no lombrici. Mucous membrane throughout pale; consistence every where natural. Agglomerated follicles pale, little elevated, of the usual reticular appearance: a few isolated follicles towards the end of the intestine. Mesenteric glands small, firm, not tuberculous. Large intestine contains a quantity of pulaceous fecal matter; follicles very little developed; mucous membrane throughout pale, of natural aspect and consistence, yielding very long strips. Liver firm, containing little blood, not fatty. Other viscera present nothing remarkable.

The disease began suddenly without the usual precursory symptoms, but as in the preceding cases, it occurred in a tuberculous subject, who was also affected with scrofulous disease of the foot. The rigidity of the right arm was one of the first symptoms noticed, and at the very commencement was sufficiently marked to attract the attention of the parents of the child; it continued without intermission until death, which occurred much earlier than in the other subjects, at the end of the eighth day. The left side of the body was frequently the seat of strong convulsive movements, and in the last two days offered a degree of rigidity as great as the right side. No delirium was noticed; the intellectual faculties were very obtuse, but still retained on the fifth when she evidently recognised her father. Vomiting occurred on the third day after the appearance of the other symptoms; the constipation persisted during the whole affection. Passing

to the anatomical lesions we find very few traces of an affection of the cerebral mass; the granulations in the fossa of Sylvius, (more abundant on the *right* side,) were anormal, but whether they are to be regarded as the product of the acute affection, or as gray tuberculous granulations, is not perfectly certain. The softening of the spinal marrow was very remarkable; no doubt could be entertained as to its existence, for the autopsy was made before the body was perfectly cold, and the spinal column was opened in such a way as to preclude the possibility of mechanical injury of the spinal marrow. The septum lucidum and fornix were also evidently softened, but the quantity of serum in the ventricles was inconsiderable. The treatment was entirely without effect; indeed, at the admission of the patient it was evident that the termination would be fatal.

*Observation V.*—Jeannette, æt. 2, entered the 9th of June, 1833. (St. Catharine, female ward; service of M. Jadelot.)—The child was left at the hospital by her mother; she stated to the sister of the ward that the child had been sick five days, was constipated, but had not vomited.

*Present state, June 9th, at 3½ o'clock, P. M.*—Hair blond; complexion clear; face slightly rosy, but not red; lips rosy, of middle size; nostrils open, not in motion; eyelids equally opened; mouth nearly closed, not deviated; eyes gray, pupils insensible, contracted, equal; she does not open the eyes herself, the portion of cornea in contact with the air is covered with a film; the eyes are fixed, a little but doubtful strabismus; stupor profound; she neither sees nor hears; expression vacant; decubitus dorsal, abandoned; head inclined backwards; muscles of the neck a little rigid; upper and lower extremities generally lying motionless, and falling nearly if not quite independently of the muscles when raised up; slight rigidity of the elbows, but doubtful; sensibility of the surface diminished, smart pinching of the skin is necessary to make her withdraw her arms or legs; at times she raises her hands in the air, moving the fingers as if in search of objects, at others she joins them at the top of her head; feeble, plaintive cries when her head is moved, not uttered at other times; subcutis tendinum not remarked, nor convulsions; deglutition possible; pulse 76, feeble, irregular, both in the force and order of the pulsations; respiration 28, elevated, expiration heard at a distance; skin rather below than above the natural temperature; percussion sonorous in the anterior part of the chest, which could not be examined minutely; abdomen yielding, insensible. Prescription, eight leeches behind the ears; sinapisms to the legs; six grains of calomel in two doses.

*10th, 9 A. M.* Face generally pale; decubitus dorsal; head in-

clined to the right side, abandoned; nostrils not dilated; features not distorted; mouth closed; lips livid; eyelids separated to the distance of two lines, leaving exposed a part of the cornea which is covered with a film of mucus; pupils directed upwards, not visible; coma profound; neither replies nor other evidence that she neither hears or sees; insensibility almost absolute; the limbs paralyzed, falling immediately if without support; countenance entirely altered, characteristic of cerebral disease; when much disturbed she moves her hands a little without directing them to any object; face and chest cool; hands hut; respiration high, 26; pulse 132, regular, and sufficiently developed; abdomen yielding, insensible; no dejections. Ten leeches to the head. four of them behind the ears, the others to the temples; blisters to the occiput; frictions with ether to the limbs; common tisane.

4½ P. M. The heart had augmented; she moves her arms, and resists a little to the efforts to extend them, but without rigidity; eyes fixed, turned upwards; pulse 112, feeble and irregular. Death during the night.

*Autopsy the 12th, thirty hours after death.*—*Exterior.* Embonpoint considerable; livid spots on the internal parts of the inferior extremities; no rigidity.

*Head.* Almost no blood flows from the exterior of the dura mater; small fibrinous coagulum in the longitudinal sinus; convolutions flattened; anfractuositities nearly effaced; arachnoid dry, adhering closely to the surface of the convolutions; pia mater on the convex surface moderately injected in the larger vessels, and offering some patches of bright redness, on each side of the fissure between the hemispheres, and extending along the greater part of its length, the arachnoid contains rounded whitish bodies of the size of a mustard seed to that of a grain of millet, much less friable than tubercles; these granulations are not to be confounded with the glands of Pacchioni, which are much smaller, of a pearly-whiteness, and most visible at the posterior part of the fissure where the granulations are very rare. The vessels on the convex surface of the brain, are accompanied by little clusters of the same kind of granulations, but not sufficiently numerous to surround them; the arachnoid near them is opaque, but without increase of the general vascular injection. The hemisphere adhere at the bottom of the fissure by numerous cellular connexions easily broken by a little effort. Pia mater in general detached with difficulty, but the surface of the brain rarely torn on raising the membrane with ease. Base of the brain offers an ounce to an ounce and a half of limpid serosity. In both fossa of Sylvius around the large vessels, I found a pseudo-membranous yellow-

ish-white enneretion, not extending beyond the fossa, and half a line to a line in thickness; some little rounded bodies can just be distinguished in the midst of this membrane, and from colour and consistence seem to be only another form of the same matter. The arachnoid covering the commissure of the optic nerves, and the polygon immediately posterior to them, is whitish, increased in thickness to a third of an inch by the concrete whitish substance effused beneath it, but can be detached more readily from the cerebral substance than this membrane on the summit of the brain. The opacity of the arachnoid extends to the adjoining parts of the base, and even to the superior and inferior surfaces of the cerebellum, disappearing by insensible gradations. The annular protuberance and medulla oblongata present the same aspect of the arachnoid, which is a little opaque to the termination of the superior third of the spinal marrow. Lateral ventricles contain an ounce and a half to two ounces of troubled milky serosity, but without injection or alteration of these parietes. Foramen of Munro rather larger than usual. Cortical substance of the cerebrum every where of a grayish-pink, the medullary portion less injected than usual. Corpora striata and optic thalami present a pink hue, a little different from that of the convolutions. The whole cerebral mass is of a perfect consistence. Septum lucidum and fornix white and firm; cerebellum not injected, a little less coloured, and not quite so firm as the cerebrum, (normal state;) medulla oblongata and annular protuberance very white and firm. Spinal marrow.—Arachnoid transparent in the inferior two-thirds, containing about an ounce and a half of limpid serosity; substance white and firm.

*Abdomen.* *Stomach* distended with mucosity; the great tuberosity is torn in separating it from the spleen; in this part of the organ all the tissues are grayish, softened, of a jelly-like aspect, and thickened; the same colour extends to all of them, but in a much greater degree to the mucous than the other coats. Anterior face irregularly shaded with livid, red spots, (of imbibition,) in other places it is yellowish or pale; its thickness is every where augmented, it yields no strips on traction, and is every where opaque; posterior face of a milky, dull-white colour, interspersed with very few red patches, but less opaque than the anterior face, not thickened, yielding strips of the usual length; no mammillation.—*Small intestine* containing a yellowish matter, but no worms; pale throughout, both as to its external and internal coats; mucous membrane yields strips of the usual length, (five to eight lines,) but they are brittle and require to be detached with much caution; agglomerated follicles of Peyer reticulated, very

little elevated, not dotted in gray or blue; isolated follicles of Brunner very numerous in the duodenum, rare afterwards, and again reë appearing in the last three or four feet, some of which near the end of the intestine are less elevated than the others, and present a central point.—*Mesenteric glands* pale, grayish, firm, of the usual size, not tuberculous.—*Large intestine* contains a greenish pultaceous fecal matter; mucous membrane pale, a little opaque, but not evidently thickened, presenting no red injection; and but few submucous vessels in the cœcum; consistence rather less than usual, strips from seven to ten lines.—*Liver*, ordinary size, of a pale brown and yellowish colour, intermixed in patches; incision yellowish, not granulated; the two substances not distinct, not evidently fatty; bile greenish, moderately abundant; *spleen* firm, bluish; kidneys firm, of a violet tint at the exterior, which is smooth and polished when freed from its external coat; bladder pale, not distended; uterus firm, of the size of a large kidney-bean; larynx pale, not ulcerated; *lungs* not adherent, of a delicate rosy-fawn colour externally, paler internally; the lower lobe of the left a little redder than the others, internally and externally. The lungs are every where soft, containing little serosity, and neither hepatized nor containing tubercles nor gray granulations. Bronchi pale, not dilated; two of the bronchial glands near the bifurcation of the trachea are converted into yellow tuberculous matter. *Pericardium* contains a little lemon-coloured serosity; heart rather small, firm, containing a little fluid blood; large vessels pale.

Although the details relative to this patient before her admission into the hospital are wanting, we have still the precise date of the affection ascertained, for there is scarcely a possibility of error in recognising the peculiar symptoms of these affections. The child was well-formed but apparently feeble, *tuberculous*, although this degeneration was confined to the bronchial glands. The symptoms were those of the last stage of these affections, slow pulse, resolution of the limbs, insensibility, &c. The lesions of the brain consisted in a notable quantity of serosity in the ventricles, a deposit of the peculiar yellow concrete matter at the base of the brain, some granulations on the convex surface of the arachnoid, which is dry and adherent to the cortical substance, but the consistence of the cerebral substance throughout good. The stomach also presented a lesion of importance.

*Observation VI.*—Bellavoine Jules, æt. 6, entered the 21st March, 1833. (Service of M. BONNEAU.)—Habitually in good health, has had small-pox, but not measles. Two years since had an eruptive disease, (thick scabs,) on the face and head. During the last two months

frequent cough in fits, apparently hooping-cough, seven or eight returns of spasmodic coughing in the twenty-four hours, and easy respiration in the intervals; during the first four days vomiting, sometimes of blood; after each fit of coughing the blood was in considerable quantity, the parents estimate it as more than a pint in the first four days. He has not kept his bed, except in the first four or five days, but remained feeble and emaciated; no diarrhoea; cough diminished within the last four days; but vomiting frequent; rejects everything he had swallowed; entire alteration of the countenance; constipation nearly constant within the last three months; mother died of phthisis a month since; has one brother fifteen months old in good health; not stated if other children have died.\*

*Present state, March 22d, at 6 P. M.*—Hair brown; emaciation moderate; no cicatrices on the neck; face pale, slightly swollen; lips red, swollen, rather dry; decubitus on the right side, avoiding the light; aversion to motion or external impressions; pupils dilated, contract but little, strabismus especially of the right eye; conjunctiva little injected; mouth not distorted; answers indireet, limited to yes and no; no delirium; humour capricious; sensibility natural, rather increased than diminished; no rigidity; frequent low moans; complains of pain in the chest, and sometimes in the head; tongue deep red at the point, grayish towards the base, moist; he neither asks for food nor drink; deglutition possible; abdomen retracted, indolent; one dejection, but not liquid; pulse scarcely felt externally, feeble, impossible to count; respiration high, irregular, sighing with dilatation of the nostrils; skin dry, but not very warm. Cold gum water; neutral mixture of Riverius; pill. ext. cinchonæ et bellad. ãã. gr. j.; cold chicken water.

23d. No vomiting; a small liquid stool; no cries; some convulsive movements of the limbs and eyes; deglutition nearly natural; at present face more coloured than yesterday; decubitus more abandoned; forehead not contracted; slight redness of the right conjunctiva, but not of the left; pupils dilated, the left more than the right; eyelids equally open, moveable; eyes rarely directed towards the objects around the patient, but moveable with strabismus; continual movement of the lower jaw, without grinding the teeth; slight depression of the left corner of the mouth; aversion to protrude the tongue, which is deep red, dry, with some whitish spots; right arm slightly

\* This history was obtained before the patient was seen, consequently the attention was not particularly directed towards the cerebral symptoms; it is evident, however, that they are of the same date as the vomiting.

flexed, rigidity doubtful; left much more flexed, rigidity not doubtful; knees slightly bent; muscles of the spine a little rigid, tendency to inclination backwards; intelligence more obtuse; no answers; respiration sighing, irregular, 36; pulse insensible; pulsation of the heart 144; abdomen retracted; percussion sonorous anteriorly; respiration nearly pure, without a trace of mucus.

*Evening.* Skin cool; pupils more dilated; rigidity in both left extremities augmented; no other change.

*24th.* Same countenance; no cries or convulsion during the night; decubitus dorsal; head turned to the right side; mouth deviated towards the right side; occasional spasmodic contractions of the muscles of the right side of the face; strabismus; pupils much dilated, not contractile; purulent discharge, and slight injection of the conjunctiva; rigidity in both arms, but moderate; smart pinching necessary to make him withdraw them; no rigidity of lower extremities; movements of jaw ceased; skin dry, but not very hot; pulse insensible; respiration high, sighing; mucous and subcrepitant rhonchus in the posterior parts of both lungs; abdomen yielding, retracted, still grimaces on pressing it.

*Evening.* Same aspect.

Death 25th, at 5 A. M.

*Autopsy 26th, twenty-eight hours after death.—Exterior.* Emaciation; no lividity; muscles pale; no rigidity.

*Head.* Very little blood on the exterior of the dura mater; fibrinous coagulum in the longitudinal sinus; moderate infiltration into the great cavity of the arachnoid, and beneath the membrane; small and large vessels of the pia mater moderately injected; cortical substance rose-coloured, of nearly the same tint at the convolutions and corpora striata; medullary portion moderately injected, consistence every where good; no tubercles found either in the cerebrum or cerebellum, which is not injected, and perfectly firm; pons varolii and medulla oblongata same aspect; some serosity at the base; pia mater in the fassæ of Sylvius, and around the commissure of the optic nerves is slightly opaque, partly from the abundance of vessels, and in fact from a large number of gray semitransparent granulations of the size of millet seeds, hard, apparently tuberculous, and seated in the membrane itself. Spinal marrow firm, pale; membranes not injected; (state of the ventricles by accident not noted, probably offering nothing particular.) Larynx and trachea rosy, not ulcerated. Pharynx and œsophagus pale, sound.—*Thorax.* Pleuræ non-adherent; both lungs offer the same aspect, dark red externally and internally, contain much spumous reddish serosity, but are not hepatized, and every where are still permeable to the air. Numerous small tubercles and

opaque granulations are scattered throughout the pulmonary tissue, especially in the upper part of the right lung, where the largest tubercle is of the size of a large pea. Bronchi a little reddish, containing some mucus. Bronchial glands not noted.

*Abdomen.* Stomach moderately distended, containing a blackish liquid, and lined with viscid transparent mucus. The two-thirds nearest the cardia offer a general yellowish white colour, traversed by bands more yellow than the rest; the mucous membrane is evidently thinner in these bands than elsewhere, (demonstrated by detaching it in strips;) beneath this membrane exist many large vessels distended with blood, but the membrane itself is throughout of a dull, opaque white, and easily broken, but not adherent to the cellular tissue, so that the strips are still long, six to eight lines in length in the portion described. In the pyloric third, mucous coat of a reddish-yellow, or onion-peel colour, with some spots of dotted redness, and much mammillated; consistence a little greater. Small intestine. Contents moderately abundant liquid matter; internal coat rosy at the beginning, pale afterwards, of good consistence, yielding strips six to eight lines in length at the beginning, near the termination strips a little shorter, without change of colour; agglomerated glands not much developed, every where of a natural dotted blue colour; isolated follicles elevated near the valve, a large number in the duodenum; mesenteric glands augmented in size, containing tuberculous matter. Large intestine containing soft fecal matter; presenting some arborescences formed by the larger vessels in the cæcum and ascending colon; but the mucous coat is every where of pretty good consistence, yielding strips eight to twelve lines in length; isolated follicles not much developed. Liver rather voluminous, greasing the scalpel a little, of yellowish-red colour, containing some crude tubercles in its parenchyma and beneath the membrane; bile green, moderately abundant. Kidneys and bladder firm, sound.

The child was tuberculous, and in a much greater degree than the preceding cases; tubercles existed in the lungs, spleen, liver and mesenteric glands; the state of the bronchial glands is not mentioned in any notes, but they were undoubtedly tuberculous. I have not met with a single instance in which tubercles existed in more than one organ, without finding them in the bronchial glands, and not unfrequently as is seen in these observations, they are the only organ affected. The granulations at the base of the brain seem a lesion of too little importance to explain the symptoms, but as the object at present is anatomical classification for the conveyance of study, rather than the comparison of the symptoms with the lesions, I have concluded to



place this case in the first category. Besides we know too little of the value of lesions to mark out with rigour the distinction between the important and trivial, we must content ourselves with what exists, and afterwards seek the interpretation of facts. The symptoms were less characteristic than in some of the preceding cases, but sufficiently so to be classed amongst those of cerebral affections.

*Observation VII.*—Trehlue Jean, æt. 6, entered 13th of March, 1833. Vaccinated; his father does not know if he had measles; never had eruptions or glandular swellings; masturbation habitual during an unknown period. In April, 1832, attacked with cholera, which lasted two months, (diarrhœa;) since then subject to colds, frequent pains in the chest and epigastrium, but rarely diarrhœa; never recovered his flesh. In January last severe cough in fits, which were very violent and often attended with vomiting, apparently whooping-cough; he left school for a short time, but returned to it in the middle of the month; appetite good; no diarrhœa. Four weeks since, pain in the thorax and epigastrium which continues; within the last three days vomiting of glairy matter, and finally of bile. Two other children in good health; none dead.

*Present state, March 14th, at 4 P. M.*—Hair dark brown; eyes closed; face pale, a little swollen; lips rosy, but rather pale; emaciation moderate; expression of feebleness and indifference; answers brief, languid; decubitus dorsal, indifference as to sides or elevation; intelligence extremely obtuse; frontal cephalalgia; tongue pale, rose colour at the edges, moist and grayish at the centre, papillæ elevated; abdomen yielding, seems tender on pressure; neither asks for food nor drink; pulse 104, small, quick; skin hot and dry; percussion and auscultation imperfectly practised, no rhonchos heard. Gum water; gum linctus with syrup of poppies, ʒij.; milk.

15th. No vomiting nor dejections since his entrance; stupor more marked; pulse rather more frequent. Same prescription.

16th. Same decubitus rather more abandoned; countenance rather more injected; stupor increased; aversion to all impressions; no coherent answers, except that he indicates in muttering that he has pain in the belly; pupils regular, contractile, but a little dilated; sensibility of surface natural, no rigidity; the hands offer an erythematous redness without much swelling, and not extending to the forearm; constipation; rarely asks for drink; tongue covered with mucus, brownish-red, dry and swollen; skin very hot and dry; abdomen retracted, yielding a slight pressure, especially at the epigastrium, causes grimaces indicative of pain; pulse 132, feeble and small; respi-

ration 20, irregular, sighing. Same prescription, with hot applications to the feet; diet.

17th. His father called to see him, but the child scarcely looked at him; same stupor, and profound indifference; eyes not altered; pulse and respiration as yesterday. Same prescription, without the opiate.

18th. Cheeks more highly coloured; lips rather pale; eyelids half opened; nostrils a little dilated; mouth not distorted; tongue covered with brownish mucus; teeth fuliginous; respiration irregular, high, 16; pulse 136, small, quick, regular; answers more distinct; he refers the pain to the abdomen, which is retracted and yielding; no typhoid spots; sensibility natural, no rigidity; skin hot and dry; constipation; percussion very sonorous on the left side; respiration very expansive, vesicular, strong, without expiration; on the right a little more feeble generally; in the superior half of the lung both before and behind the inspiration is feeble, less vesicular than on the left, and followed by a distinct expiratory sound; resonance of the voice impossible to examine.

19th. Same countenance and stupor; teeth fuliginous; tongue cleaning; constipation; some dry mucous rhonchus, (*craquement*), on the right side of the chest. Gum water; gargle with solution of chloride of lime; sinapisms to legs; chicken water.

20th. A natural alvine dejection; same state of cerebral faculties; feebleness extreme; tongue dry and red; sensibility of abdomen persists; diarrhoea in the night, and death the 21st at 9 A. M.

*Autopsy 22d, twenty-four hours after death.*—Exterior. Emaciation advanced; no lividity or infiltration.

*Head.* No blood on the exterior of the dura mater; small coagulum in the longitudinal sinus. Arachnoid dry, adhering rather closely to the convolutions. On the inferior and middle part of the left hemisphere, beginning an inch from the median fissure, we observed a yellowish patch of irregular extent formed by a light yellow substance infiltrated beneath the arachnoid, of the thickness of one to two or three lines, adhering strongly to the cortical substance, and as it were infiltrated into its tissue; the cerebral substance beneath it, both medullary and cortical, but especially the latter, are softened to such a degree as to be crushed beneath the scalpel instead of yielding a smooth incision; the softened medullary portion has a yellowish tinge. In the vicinity of this substance are a number of little, hard, yellowish granulations adhering to the arachnoid, detached in raising it up, and seemingly deposited in its substance or immediately beneath it.

The same kind of granulations are found in the midst of the yellowish matter, but are still distinct and harder, resembling the yellow tubercles formed in the midst of gray infiltration into the lungs. The whole left fossa of Sylvius is filled with this same yellowish and greenish substance, which unites the edges of the fossa together, and extend to a little distance on each side of it, and containing the same kind of granulations; the contiguous arachnoid around the commissure of the optic nerves and the pons varolii is a little thickened. On the superior part of the right hemisphere, as well as in the fassa of Sylvius, numerous granulations, and with some little patches of the amorphous yellow substance, accompany the vessels, but adhere less to the brain. Pia mater generally more injected than usual. Cortical substance pale-gray. Medullary not dotted with blood; consistence good, excepting in the part described; septum lucidum and fornix firm, white; a spoonful,  $\text{ʒiij.}$  to  $\text{ʒiv.}$ , of serosity in each lateral ventricle; very little serosity at the base. Cerebellum, pons varolii, and medulla oblongata, firm, not injected. Spinal marrow firm, not injected; a little serosity beneath the arachnoid.

*Thorax.* Lungs non-adherent; some tubercles found beneath each pleura. The upper lobe of the right lung towards its posterior part contains an opaque, hard tubercle of the size of a filbert; around it are several small, opaque tubercles, and a small empty cavity of the size of a pea; parenchyma not hepatized, but reddish, and containing much spumous serosity; the lower lobes, as well as the whole of the lung, offer numerous opaque tubercles scattered through a crepitant, sound tissue. Bronchial glands tuberculous. Larynx, pharynx, and trachea pale, not ulcerated: bronchi rosy.

*Abdomen.* Stomach, internally of a grayish-rose colour; of good consistence; strips of the usual length, a little mammillated around the pylorus; the mucous membrane presented seven ulcerations, four of them on the anterior face, the other on the posterior and in the small curvature; they are rounded, a line or two in diameter, with elevated edges, pale, bottom formed by the cellular tissue. Small intestine pale throughout, offering four or five little ulcerations of the isolated follicles, and one seated in a gland of Peyer. Mesenteric ganglia tuberculous, hard, yellowish. Large intestine, rosy internally, few follicles visible, consistence good. Liver voluminous, a little fatty, of a pale-yellow colour; the upper and lower surfaces offering a great number of tubercles, which are also numerous in the peritoneum lining the diaphragm—not observed in the liver. Spleen four inches long, firm, dark colour, literally filled with opaque tubercles, the largest of the size of large peas. Kidneys and bladder not noted.

The subject of the present observation presented *tuberculous* deposit in a large number of organs; in the brain the small granulations, which were harder and more rounded than those usually met with, were intermixed with a sort of plastic fibrinous substance apparently intermediary between the pseudo-membranes so often noted beneath the arachnoid and real tuberculous matter: was it really tuberculous, or are the yellowish-gray granulations analogous to those found in the lungs, and is the amorphous substance of the same nature as the deposits usually found in the cerebral diseases of childhood? The case must be compared with others in my possession, which will be published in the following number, and in which the meningitis was still more unquestionably tuberculous. The reader is probably struck in looking over these cases with the intimate connexion between these affections and tuberculous disease; he must, besides, remember that the cases which are given in this number are those offering the most unequivocal anatomical lesions without the presence of well-marked tuberculous or cancerous deposits of sufficient importance to render probable their immediate connexion with the symptoms.

*Observation VIII.*—Margotin Antoinette, æt. 8, entered the 17th of March, 1833. (Service of M. BAUDELLOCQUE.) Details communicated by her mother, a woman of little intelligence. The child was nursed in the country, returned to Paris at the age of three years; has never had enlargement of the glands of the neck, nor convulsions, nor worms, nor habitual pains in the abdomen; never received blows on the head; always subject to an eruptive disease of the scalp, which has gradually diminished lately, had measles at the age of two years, and small-pox in September last, since that time health not perfectly recovered; frequent head-ache, returning every two or three days; diarrhœa from time to time, lasting about two or three days, and then ceasing; appetite great. In the middle of February somnolence with augmentation of the head-ache; anorexia within the eight days previously to admission, and constipation; on the 12th vomiting of the tisane given her, renewed every day since; no delirium, but cephalalgia constant.

Of six children one died at the age of eleven years of croup, the others are in good health, and have never had convulsions; the father died in the last summer of a cerebral disease, (diagnostic of the physician,) after an illness of one day—symptoms not recollected. Mother in good health.

*Present state, March 17th, 1833.*—Hair and eyes dark-coloured; skin brown; embonpoint moderate; no cicatrices on the neck; decubitus variable; face generally but moderately coloured; lips red, rather

dry, of middle size; eyes hollow, not injected, pupils contractile, eyelids half open; forehead slightly contracted; frontal cephalalgia, at times she applies her hand to the forehead as if from sudden increase of pain; mouth and tongue not deviated; nostrils not dilated; answers short, languid, but correct; says she could eat in reply to a question, but neither asks for food nor drink; sensibility and motion natural; somnolence alternating with agitation, from time to time she moves her arms and seems in a state of constant agitation; pulse very irregular, rather feeble, 68; respiration irregular, high, 12 per minute, at times stertorous; skin rather dry, not particularly hot; tongue moist, rosy at the edges, whitish at the centre, easily protruded; neither vomiting nor stools; urine rare; abdomen yielding, not tender; no typhoid spots or sudamina; percussion sonorous; a little mucous rhonchus in the large bronchia. Calomel, gr. xij.; purgative enema; eight leeches to anus; sinapisms to legs.

18th, 9 A. M. Pupils less contractile, the right a little dilated, strabismus moderate, eyes little sensible to the light; jaws strongly closed, impossible to open them; head inclined backwards; rigidity of muscles of back of neck; no rigidity of the limbs; sensibility a little diminished on the left side of the body; mouth seems a little drawn towards the right side; no grinding of the teeth; no answers, seems not to hear the questions; deglutition easy yesterday, now very difficult; agitation and moans during the night, these moans have the acute tone attributed to hydrocephalus; heat elevated, dry; no vomiting, two dejections after the enema; abdomen yielding, not tender; pulse 140, full, regular; respiration 45, precipitated. Repeat the calomel, gr. xij.; purgative enema; two blisters to the arms; sinapisms to lower extremities; seton to the neck.

19th, 4 P. M. Decubitus abandoned; complaints more rare; face a little livid; less contraction of the forehead; nostrils in motion; mouth still a little drawn to the right; pupils equal, contractile; sensibility a little diminished on the left side, with slight rigidity of the articulations of both arm and leg; same stupor, but rather less unmeaning expression; questions seems to be understood, but she replies with great reluctance—points to her forehead as painful, instead of speaking; sight preserved; occasionally grinding of the teeth; deglutition easy; heat elevated at the head but not in the extremities; pulse irregular, feeble, 120; respiration high, very irregular, 36; mucous rhonchus in both sides of the chest, especially in the upper parts of the lungs; no vomiting or dejections; urine twice, involuntary; abdomen yielding, not tender. Tisane; hot applications to legs.

20th. Pupils as yesterday, strabismus; face injected; understands

questions; complains of her head; less rigidity of the neck, none of the extremities; pulse 126; respiration 40, very high and irregular; abundant mucous rhonchus at the summit of the left lung; heat of skin moderate; one dejection; urine three times. Frictions with mercurial ointment; ox. antim. alb.  $\mathfrak{z}$ ss.; purgative enema; sinapisms.

21st. No rigidity; mouth a little more deviated than yesterday; replies, but with difficulty; still complains of her head; face rather more livid; senses as yesterday; mouth drawn more aside; cough rare, loose; pulse 160; respiration 40; abundant inucous rhonchus in the right lung generally, a little in the posterior part of the left; a stool before administering the enema, another after it; urine three times. Oxyd antimon,  $\mathfrak{z}$ ss.; inmercurial frictions; purgative enema; sinapisms; infus. altheæ.

22d. Mouth less drawn aside; speech still embarrassed; tongue slightly deviated towards the left side; lividity of the face; complains less of his head; sensibility less on the left; respiration abdominal, high, 40; pulse feeble, small, 150; cough not very frequent. In the superior two-thirds of the posterior part of the right lung abundant crepitus and bronchial tubal respiration; one dejection after the enema.

Death the 23d.

*Autopsy 24th, thirty hours after death.*—Exterior not noted.

*Head.*—The great cavity of the arachnoid contains about a large spoonful of transparent serosity. The large and small vessels of the pia mater. are much injected; convolutions depressed; the anfractuositities nearly obliterated at the upper part of the brain. The fissure separating the two hemispheres of the cerebrum at their anterior adheres closely together, so that the cortical substance is torn in separating the two hemispheres. The left fossa of Sylvius presents nothing remarkable; the right presents a number of whitish-yellow lenticular points of the size of millet seeds, of the same aspect as those found in the subjects of the preceding observations; the pia mater can be easily detached from the surface of the convolutions, and remove at the same time the granulations which adhere closely to it. At the base of the brain in general, and especially the commissure of the optic nerves, the arachnoid is injected, but not evidently thickened, and without trace of purulent or tuberculous infiltration. Ventricles not dilated, containing from one to two tea-spoonfuls of serosity. The cortical substance generally is more injected than in the majority of subjects; medullary much dotted with blood. Brain in general rather flaccid, but not evidently softened; consistence of the fornix and septum lucidum good. The membranes covering the cerebellum offer the same injection as elsewhere; its substance contains numerous

vessels, and is of good consistence. Pons varolii and medulla oblongata firm, not injected. Medulla spinalis of natural whiteness and consistence; membranes a little injected.

*Thorax.* Right lung adheres posteriorly; upper lobe rose-fawn colour generally, a little violet posteriorly; tissue in the anterior third is rosy, containing an abundance of spumous serosity; the posterior half and an isolated mass the size of a hazelnut in the middle portion is of a reddish-violet colour, with scattered yellowish points more prominent than the rest of the mass, (points probably caused by small portions of the parenchyma not hepatized,) very friable, not floating, containing no air; the pulmonary vessels are still visible in this portion. The middle lobe offers the same aspect as the anterior part of the upper. Inferior lobe every where reddish-brown externally, excepting the anterior border; tissue violet-red, with the same yellowish points as in the upper lobe, granulated, very friable, a slight pressure reducing it into a reddish pulp; in the upper part of the lobe, near its posterior border, I found a cavity of the size of an almond, containing a reddish-yellow liquid, not lined by a false membrane, the walls of it formed by the pulmonary tissue itself, some remains of which float in the cavity in the form of cellular filaments; this cavity offers no apparent communication with the bronchia. No traces of tubercles in the lung. Bronchia a little reddish in the upper lobe generally, of an intensely red colour in the hepatized part. In the lower they are compressed and flattened, but easily followed to their extreme ramifications, of a deep red colour, containing much yellowish mucus.—Left lung. Lobe superior externally of a light fawn-rose colour; some lobules at its anterior part are more prominent than elsewhere; the pulmonary vesicles are in this part distinctly seen, but not greatly dilated: a dozen transparent gray granulations are scattered beneath the pleura, they are hard and prominent, (tuberculous.) Tissue rosy, soft, containing much spumous serosity without tubercles or other granulations. Lower lobe soft, rosy, containing a little spumous serosity; posterior part reddish-violet, friable, containing no air, of the same aspect as the hepatized part of the right lung. Bronchia reddish, especially in the inferior lobe. Bronchial glands in part converted into tuberculous matter, the largest of the size of a large filbert; the other glands are of a dull-white, rather soft.—Heart. Left ventricle three lines in thickness at the middle; right, one line; internal membrane pale.

*Abdomen.*—Stomach middle size, containing a whitish matter. Mucous membrane generally of an opaque-white tint. In the great tuberosity the membrane has the same dull-white colour, is much

thinner than natural; some large veins are still visible beneath it, but the membrane although softened is more easily detached than usual, and yields strips five or six lines long: in the small curvature we found a few partial depressions, whose edges were a little elevated, rosy, the mucous membrane not entirely destroyed: in the middle of the posterior face the mucous membrane in the diameter of more than two inches is yellow, traversed by numerous small bright-red arborizations: mammillation in the two or three inches nearest the pylorus; consistence of the membrane normal, strips eighteen lines long in the small curvature. Duodenum contains numerous follicles, tinged by the greenish matter contained.—Small intestine. Rosy externally, containing a yellowish liquid; mucous membrane generally rosy—at the beginning of the jejunum it is red in an extent of three or four inches, the redness is bright and dotted; strips of the mucous membrane six or seven lines in the jejunum generally, rather less in the part that is reddened. Mucous membrane of the ileum rosy irregularly, covered with adhesive mucus; membrane a little softened, yielding strips only three or four lines long; the injection is more marked in approaching the valve. Isolated follicles numerous and prominent in the whole length of the ileum, at first red and prominent without evident connexion with the colour of the surrounding membrane; near the valve the follicles are yellowish-white at their centre, and are covered by a yellowish mucus more adherent than elsewhere, and apparently a secretion from the membrane: two of the isolated follicles two feet from the ileum are ulcerated, the ulcerations rounded, edges elevated and reddish, bottom grayish, formed by the mucous membrane incompletely destroyed. Agglomerated follicles, (Peyer,) reticular, pale, not reddened nor thickened. Mesenteric glands small, pale-violet, not tuberculous.—Large intestine. Not distended, containing some greenish fecal matter; cæcum and ascending colon rosy, with some arborizations; mucous membrane firm, strips eighteen or twenty lines in length. Transverse colon pale, presenting a reddish patch a few lines in diameter: the rest of the intestine is pale, consistence every where excellent; follicles in the cæcum little developed, nearly invisible in the rest of the intestine. Liver middle size, yellow externally and internally; two substances distinct—greasing the scalpel a little. Gall-bladder moderately distended by a liquid greenish bile. Spleen four inches long, bluish externally, brownish-red internally, firm. Kidneys pale, firm. Bladder pale.

The child was feeble, *tuberculous*, as the autopsy proved; the cerebral symptoms were, however, not intense, and had notably dimi-



nished when the pneumonia supervened, and was the immediate cause of death. The cerebral lesions were slight, some may ask were they real, it is useless at present to discuss a question which can be completely resolved by comparing the facts; at present it may be well to mention that these granulations are peculiar to cerebral affections: I speak from memory, but the fact will be reconsidered. The abdominal lesions consisted in the softening of the mucous membrane of the stomach and the inflammation of the small intestine, especially the isolated follicles: the agglomerated follicles were sound, a fact which seem to prove the little connexion between their affections and those of the rest of the intestine. The large intestine, contrary to the more common rule, was not diseased.

*Observation IX.*—Landras Sophie, æt. 6½, entered the 2d February, 1833. (Service of M. Baudelocque.) Born at Paris, inhabiting one of the dirtiest and worst ventilated quarters, (cité;) vaccinated; has not had measles; her father thinks she has not had hooping-cough: subject to an eruption of the scalp, which disappeared within the last six weeks, after the application of an empirical ointment. The glands of the neck are augmented in size since the age of two or three years; not stated if chronic ophthalmia existed; a blister on the arm which had been kept open during the last two years has been allowed to heal since the disappearance of the cutaneous affection; ten days before admission anorexia without vomiting; complains of pain in the abdomen and head; convulsions repeated several times, marked by strong spasmodic movements of the face and limbs; no delirium nor eough; constipation; these symptoms persist notwithstanding an application of leeches behind the ears; has never had convulsions in infancy; lodges in a damp room on the ground floor; six persons sleeping in the same room; four children, the eldest eleven years old, three of them are girls, the others have neither had convulsions, nor enlargement of the glands nor eruptive diseases; details obtained from her father, whose intellect is too obtuse to render them certain.

*Present state, February 3d, 1833.*—Hair and eyes black; a little emaciation; face pale, a little yellowish; lips thick, pale violet; debilitus dorsal, abandoned; eyes hollow, surrounded with a dark circle; strabismus; pupils a little dilated, irregular, especially the right; mouth not distorted; nostrils contracted; from time to time abrupt spasmodic contractions of an isolated muscle of the face, (more frequent an hour or two since,) tongue easily protruded, not deviated; no rigidity of the limbs; sensibility of the surface generally augmented, rather than diminished; stupor constant, almost coma, aversion to all excitement or motion, but not ill humour; frequent sighs, with

feeble plaintive moans; incoherent muttering; answers brief, but correct; says she has pain in the head and abdomen, pointing to the umbilicus; no subsultus tendinum or floccilation; within the last two hours she frequently asks for drink; deglutition easy; no convulsions; tongue swollen, depressions in its edges corresponding to the teeth, grayish, moist; abdomen yielding, not distended; no dejections; neither sudamina nor petechiæ; pulse small, quick, 136; respiration sighing, 24; cough rare, loose; respiration ausculted anteriorly, pure; skin hot and dry. Warm bath at 9 A. M. and another at 5 P. M. with cold affusion on the head; vinegar poultices to feet; inf. tigliæ for drink; purgative enema.

4th, 8 A. M. Same appearance of the eyes; hands constantly applied to the head; forehead contracted; stupor increased; no longer asks for drink; no answers; muttering occasionally; night agitated, but without cries; motion and sensibility natural; respiration high, irregular, 16; pulse 124, small, feeble, regular; large evacuation after the enema; urine reddish, voluntary; repeat the baths, with cold affusion; inf. tigliæ; hut poultices to the feet.

5th, 4 P. M. Face more injected than in the morning; same decubitus, hands applied to the head; answers better than yesterday; features not distorted; pupils still moderately dilated, strabismus; frequent moans, but no cries; no convulsions observed by the nurses; no rigidity; sensibility and movement natural; still says she has pain in the head; subsultus tendinum very frequent at the wrist; does not ask for drink, but swallows easily and with avidity when the cup is put to her lips; pulse 130, quick, always regular; respiration irregular, sighing, 16; no cough; skin hot and dry; tongue moist, grayish, deviation towards the left side, doubtful; voice feeble, sighing; abdomen yielding, she gives no evidence of pain on touching it. Repeat the baths and hut applications.

Death the 6th at noon. The persons who saw her in the morning remarked no change.

*Autopsy the 7th, twenty-two hours after death.*—Emaciation not advanced; no lividity or rigidity; not infiltrated.

*Head.* Very little blood on the exterior of the dura mater; longitudinal sinus empty; arachnoid on the convexity of the brain perfectly dry, no effusion beneath it; surface of the brain smooth and uniform; anfractuosities almost totally obliterated; pia mater not injected, easily detached from the cortical substance; fluctuation of a deep-seated liquid manifest; no granulations or patches of false membrane beneath the arachnoid. The fluctuation was caused by about three ounces of limpid serosity accumulated in the lateral ventricles; fora-

men of *Monro* is much dilated, rounded, nearly three lines in diameter; *fornix* and *septum lucidum* soft, torn by a slight effort, but not diffuent. *Corpora striata* and *optic thalami* firm, not injected; cortical substance of the convolutions pale gray, slightly orange coloured, rather paler on the right than the left side; consistence throughout perfectly good; *cerebellum* equally pale as the *cerebrum*, not injected; near its superior face a little to the right of the middle, is a tubercle four or five lines in diameter, rounded, of a dull yellowish-white, contained in a thin but hard semicartilaginous cyst, from which it can be easily detached; the surrounding cerebral substance is neither injected nor softened. *Arachnoid* at the base of the brain a little milky, but contains little serosity; no traces of granulations in any part, or purulent infiltration. *Spinal marrow* of a light yellow or orange tint, not injected; consistence good. *Larynx* and *trachea* pale, not ulcerated. *Œsophagus* and *pharynx* same state.

*Thorax.* Right lung not adherent; *pleura* containing an ounce to an ounce and a half of serosity; upper lobe rosy, fawn colour anteriorly, violet posteriorly; in the anterior part the lobes are irregularly prominent, and vesicles a little dilated; tissue spongy, soft, containing much spumous serosity, but neither induration nor tubercles. Middle lobe same aspect, and equally sound as the upper; lower lobe a little reddish posteriorly, soft, a little more engorged than the upper lobes, but every where permeable to the air; no tubercles; bronchi very pale; left lung non-adherent, a little serosity in the *pleura*; upper lobe rosy, presenting along its anterior portion vesicles of the size of grains of sand, as in the right lung; perfectly permeable, without tubercles, but contain much spumous serosity; lower lobe similar to the lower lobe of the right lung, but also containing some nodules, dark red, not granulated, hard. Bronchi as in the right. *Bronchial glands* grayish, small, not tuberculous; but one near the right *bronchus* contains a little cretaceous matter; another of the size of a large pea is entirely converted into this substance. *Pericardium* contains but little serosity; heart a little larger than the fist of the subject; fibrinous coagula in both cavities, larger in the right than the left; thickness of the left ventricle two lines and a half, of the right a little less than a line; large vessels pale.

*Abdomen.* Stomach of middle size, containing much mucus, adhering strongly to the internal coat. The great tuberosity and cardiac half of the large curvature present an irregular thinning of the mucous membrane, in a patch three inches in diameter; colour pale, and in some parts the membrane scarcely exists, rendering the muscular fibres very evident; a few large vessels not dis-

tended with blood are visible beneath the membrane. No vivid injection, general aspect reddish-gray, (onion-peel;) consistence much diminished in the part that is thinnest, strips three lines, in the rest of the large curvature they are eight or ten lines long, and more than an inch in the small; mammillation not evident.—*Small intestine* not distended, containing a yellowish, moderately abundant mucus. Duodenum rosy, isolated follicles abundant, of the size of mustard seeds; some of them with central points. Intestine in the upper retains the rosy colour, is of a villous appearance, but contains few isolated follicles; pale afterwards, with no injection, of normal consistence, strips at first six or eight lines, a little larger in the ileum; a few isolated follicles were found in the last two feet. Agglomerated glands of Peyer begin in the upper third, forty of them were found, of a dull white colour, little elevated, (normal.) Mesenteric glands small, pale, gray, firm.—*Large intestine* not distended, containing soft fecal matter. Cæcum pale, but offering a few vascular ramifications, in the rest of its extent the intestine is pale gray; the consistence every where perfect, strips of the membrane varying from eighteen lines to two inches; thickness normal, increasing in approaching the rectum; follicles prominent, of the size of pin's heads, marked with a grayish central point.—*Liver* smaller than usual, containing little blood; substance brownish-red, firm; the two substances not distinct, firm. Gall-bladder small, containing a brownish-yellow bile.—*Spleen* two inches and a half long, reddish, firm, without tubercles.—*Kidneys* firm, a little livid.—*Bladder* moderately distended, pale, firm.

The antecedents of this case are defective, we know only that the child was ill lodged, belonging to the poorest class, and of course miserably fed; that she had had chronic enlargement of the glands of the neck. The commencement of the present affections was fixed by her parents at a very recent date. The cerebral lesions consisted chiefly in the effusion of limpid serosity into the ventricles, and dryness and adherence of the arachnoid at the surface. The stomach presented the partial thinness of the mucous membrane so often met with; the other viscera nothing remarkable. The subject was also affected with tuberculous disease; a tubercle was found in the cerebellum, and two of the bronchial glands contained cretaceous matter, the cervical ganglia were unfortunately not examined. The coincidence of the disappearance of the external signs of scrofula, and the existence of cretaceous matter in two of the bronchial glands, seem to prove in this as in one of the preceding cases, that this substance is a form of one of tuberculous depositions.

*Observation X.*—Fortin Jean, æt. 4, entered the 4th of October, 1832. (Service of M. Bonneau.) Health generally feeble; character sad, morose; head large. On the 26th of September he complained of violent cephalalgia; skin hot; thirst; anorexia; agitation at night; vomiting at the beginning; stools liquid, not numerous; continued going to school, and did not keep his bed a single day.

*Present state, October 4th, 1832.*—Hair brown; skin dark-coloured; no œdema; head large; eyes closed, not injected; pupils contractile; answers slow, intelligence obtuse, but he is still able to refer the pain to his head; features not distorted; sensibility and motion natural; tongue moist, rosy; thirst moderate; abdomen developed, but yielding; the convolutions of the intestines easily felt; pressure not painful; skin hot and dry; pulse small, feeble, 104.

*5th.* Stupor increased; calm during the night; pupils contractile, not dilated. In the afternoon the coma was still more profound; countenance altered; pupils irregularly dilated; mouth covered with foam; jaws closed; at times grinding of the teeth; relaxation of the muscles, sensibility almost wanting; skin not so hot; abdomen yielding, but pressure upon it causes grimaces apparently from pain; pulse feeble, quick, 120; constipation. Prescription of the morning; two leeches behind each ear, and two to the arms; vinegar poultices to feet; oil mixture; tisane.

*6th.* Decubitus more abandoned; same colour of the skin; strabismus marked; coma profound; jaws strongly closed. At times spasmodic contractions of the muscles of the face; paralysis of sensibility and motion complete on the left side, partial on the right; pupils dilated, especially the left; pulse 160, small, quick; abundant liquid stools; abdomen retracted, not tender; cough frequent; mucous and sonorous rhonchus at the base of the lungs. Blisters to thighs and back of neck, with ammoniacal cerate; enema with camphor, gr. iij.

*7th.* Coma persists; slight rigidity of the left arm; sensibility seems more perfectly extinct on the right than the left side; heart elevated; pulse feeble, irregular, 160 to 180; several liquid discharges; the region of the occiput was vesicated by a compress dipped in boiling water; a slight motion of the body was the only sign of pain manifested; symptoms not changed during the day; at 5 P. M. cold clammy sweat over the whole body; slight convulsive movements of the face and limbs.

Death at 9 P. M.

*Autopsy the 8th, twelve hours after death.*—Emaciation advanced; livid marks upon the parts touched with hot water.

*Head.* Little blood exterior to the dura mater; fibrinous coagulum

in the sinus. Arachnoid moist; serosity beneath it more abundant than usual, especially on the right side, where it causes a semi-opacity of the arachnoid. Pia mater a little injected, easily detached from the cortical substance, which is redder than usual. Medullary rather dotted with blood; consistence perfectly natural. Ventricles extremely distended in approaching them, fluctuation very evident. In the two the total quantity of serosity was not less than six or seven ounces; it was perfectly limpid, and was almost entirely evacuated upon opening the ventricle on one side. Foramen of *Monro* two or three times its usual size; the septum lucidum and fornix were rather softer than usual, but not pulsaceous; parietes of the ventricles not at all injected. Corpora striata and thalami firm.—Base. The arachnoid around the commissure of the optic nerves is thickened, opaque and yellowish, resisting the scalpel: the same yellowish tint, but without evident thickening, extends to all that part of the arachnoid bounded laterally by the olfactory nerves. Upon the superior part of the right hemisphere of the cerebellum there is a patch some lines in breadth, formed by the deposit beneath the arachnoid, of the same yellow opaque substance found at the base of the brain. The meninges elsewhere are neither thickened nor injected.

Larynx pale, not ulcerated. Pharynx idem. Right pleura generally adherent; left free; numerous tuberculous granulations beneath the right pleura. Right lung posteriorly much engorged, especially in the lower lobe, which still contained air, but was filled with reddish serosity; upper and middle lobes rosy-fawn colour, reddish posteriorly, but light, perfectly permeable to the air. Bronchi pale, not thickened. Left lung in its superior lobe less red than the right, but equally soft and spongy. Inferior lobe rosy anteriorly, reddish posteriorly, presenting an induration in the middle of the posterior part, the tissue of which is smooth, brownish, and resists strongly on pressure. Bronchi pale; no tubercles found in the lungs. Bronchial glands not tuberculous. Pericardium nearly without serosity. Large fibrinous coagulum in the right side of the heart; left nearly empty; tissue of heart firm.

*Abdomen.* Stomach contains only a little adherent mucus. Mucous coat of a reddish-yellow, onion-peel tint, generally with some dotted red patches scattered throughout its whole extent; thickness, but membrane generally softened, strips one line long in the great cul-de-sac, two or three in the great curvature, and about four in the small. Small intestine containing a yellowish, moderately abundant matter. In the upper half the membrane is grayish, tinged by the bile without arborizations, but softened, yielding strips only two or three

lines long—in the lower half about a line longer. A few isolated glands were developed at a few feet from the valve. Three of the agglomerated glands, (Peyer,) at two or three feet from the valve, were red and swollen; two of them are ulcerated, the ulceration on one is rounded with perpendicular edges, the second offers two ulcerations a line and a half in diameter, separated by a half-destroyed band; the redness of the bottom and edges is the same as that of the rest of the gland; the mucous membrane is entirely destroyed. The mesenteric glands corresponding to the ulceration are reddened, doubled or tripled in size, but not evidently softened. Larger intestine contains fecal matter without intense redness, offering a few scattered vessels, not thickened, but a little softened; strips one-half shorter than usual. Liver of a brownish colour, firm—the two substances not distinct. Spleen of middle size and firm. Kidneys sound.

*Remarks.*—This case offers some analogy with the preceding; the subject was apparently affected with chronic hydrocephalus, and was afterwards taken with the acute affection characterized by the effusion of the yellowish substance. The lymphatic glands were not tuberculous, but gray granulations were numerous beneath the right pleura. A singular complication in this case was the ulceration of the glands of Peyer, ulceration in children not absolutely peculiar to typhoid fever or tuberculous affections.

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ART. IV. *On the Communicability of Cholera.* By S. HENRY DICKSON, M. D. Professor of the Institutes and Practice of Medicine in the Medical College of the State of South Carolina.

A VERY decided majority of the physicians of our country who have published notices of this justly dreaded pestilence, have agreed in denying to it the property of contagiousness. Nay, some among us as well as in Great Britain have gone so far as to arraign the ancient regulations of quarantine and sanitary cordons as useless, cruel and absurd, and to advocate their total abandonment. It must be allowed that these restrictions upon the freedom of trade, and the open intercourse so advantageous to all nations are inconvenient, and in a certain degree injurious and oppressive; but it behoves us to discuss the subject with the most deliberate impartiality before we assume the high responsibility of advising their entire abrogation.

No argument will, I presume, be required to prove the absolute